



## **QUARTERLY GROUNDWATER MONITORING REPORT**

**First Quarter 2005 (Eleventh Quarterly)**

**Sampled on February 6, 2005**

**Job # SP-120**

**LOP # 12365**

**Big Oil & Tire - Bigfoot Service Station (Bigfoot Gas)**

2801 Central Avenue

McKinleyville, California 95519

May 28, 2005

This *Quarterly Groundwater Monitoring Report* was prepared by SounPacific Environmental Services (SounPacific) staff for Big Oil & Tire Co. (BO&T), using previous studies that were conducted by Clearwater Group, Inc. (CGI) and file review conducted at Humboldt County Department of Health and Human Services: Division of Environmental Health (HCDEH). The station is located at 2801 Central Avenue in McKinleyville, California (Figure 1).

### **SITE DESCRIPTION**

The site is surfaced around the current structure with concrete and asphalt. Site improvements include a single story building with an attached, overhead awning that covers the main dispenser islands. The main structure covers approximately 800 square feet and is positioned near the center of the property with the entrance to the building facing west towards Central Avenue. Attached to the main structure is a small out building at the north end of the property that is used for storage (Figure 2).

Two (2) 12,000-gallon split compartmented underground storage tanks (USTs) are located in a single excavation between the station and Central Avenue and are used for the storage of three (3) grades of unleaded gasoline and diesel fuel. Fuel is dispensed from two (2) main dispenser islands, which are located under the awning. BO&T owns, operates and is therefore responsible for the maintenance and testing of the product lines and the UST system on a regular basis. The site is serviced by public utilities. Surface water is controlled by drainage ditches and storm drains (Figure 2).

## **SITE TOPOGRAPHY AND LAND USE**

SounPacific understands that the property is currently owned by BO&T of Arcata, California. The main structure is used as a retail gas station for the dispensing of three (3) grades of unleaded gasoline and diesel fuel from the USTs on site. On the north section of the property, a commercial propane tank is stored and used for the filling of smaller propane tanks for the public (Figure 2). The surrounding land use is a mixture of commercial and residential. An automobile garage is located immediately to the south across Murray Road, and properties adjacent to the east, west and north are undeveloped.

The site is approximately two (2) miles east of the Pacific Ocean and approximately 110 feet above mean sea level (amsl). The site is situated approximately 600 feet South of Norton Creek and 1,400 feet North of Widow White Creek. According to the United States Geological Survey Arcata North Quadrangle California-Humboldt County, 7.5 minute series (Topographic) 1959 (photo-revised 1972), a tributary of Norton Creek is re-routed into an underground culvert along the South side of the site. Norton Creek is also artificially controlled along the eastern side of Central Avenue near the site. These two engineered drainage features intersect near the southwestern corner of the property and flow west, toward the Pacific Ocean (Figure 2). It is uncertain if the engineered drainage along the southern and western boundaries of the site will exhibit any hydraulic influence on groundwater flow directly beneath the site. Topography consists of rolling terrain that gently slopes west toward the Pacific Ocean (Figure 1).

## **RESULTS OF QUARTERLY SAMPLING**

A quarterly groundwater monitoring program was implemented on July 15, 2002, and will continue until further notice. The program consists of recording quarterly water level data and collecting quarterly groundwater samples for laboratory analysis. Water level data is used to develop a figure which displays the groundwater gradient and average flow direction using standard three-point calculations. Analytical results from groundwater samples collected from the monitoring wells during quarterly sampling events represent hydrocarbon contamination levels in the groundwater beneath the site. Monitoring wells were gauged and sampled on February 6, 2005.

### **FIELD DATA**

<b>Wells gauged:</b>	MW-1, 2, 3, 4, 5, and 6
<b>Groundwater:</b>	Ranged from 109.83 to 111.00 feet above mean sea level (Table 1)
<b>Floating product:</b>	No sheen detected
<b>Flow Direction:</b>	West (Figure 3)
<b>Groundwater gradient:</b>	0.01 feet per foot (Figure 3)

On February 6, 2005, the depth to groundwater in the site's six monitoring wells ranged from 1.62 feet below top of casing (btoc) in well MW-5 to 2.79 feet btoc in MW-2. When corrected to mean sea-level, water level elevations ranged from 109.83 feet above mean sea-level (amsl) in MW-3 to 111.00 feet amsl in MW-5. Groundwater levels for the February 6, 2005, monitoring event, along with historical levels and elevations are included in Table 1. Groundwater flow on February 6, 2004, was generally flat with a gradient towards the West at 0.01 feet per foot. The groundwater flow and gradient are graphically depicted in Figure 3. Prior to sampling, all wells were purged; the groundwater field parameters for each well are presented below.

**MONITORING WELL MW-1 GROUNDWATER FIELD PARAMETERS**

<b>Time</b>	<b>Total Vol. Removed/ gal</b>	<b>pH</b>	<b>Temp./ F</b>	<b>Cond./ ms(cm)<sup>-1</sup></b>
12:06	0	7.20	53.74	0.181
12:10	1.63	7.20	55.72	0.180
12:16	3.26	7.26	56.50	0.173
12:21	4.89	7.23	56.76	0.172

**MONITORING WELL MW-2 GROUNDWATER FIELD PARAMETERS**

<b>Time</b>	<b>Total Vol. Removed/ gal</b>	<b>pH</b>	<b>Temp./ F</b>	<b>Cond./ ms(cm)<sup>-1</sup></b>
2:24	0	6.75	55.56	0.673
2:28	1.48	6.91	56.20	0.641
2:31	1.96	6.96	56.31	0.608
2:36	4.44	6.96	56.38	0.556

**MONITORING WELL MW-3 GROUNDWATER FIELD PARAMETERS**

<b>Time</b>	<b>Total Vol. Removed/ gal</b>	<b>pH</b>	<b>Temp./ F</b>	<b>Cond./ ms(cm)<sup>-1</sup></b>
12:33	0	6.50	54.63	0.208
12:37	1.46	6.59	56.37	0.219
12:41	2.92	6.57	57.10	0.271
12:51	4.38	6.60	58.23	0.289

**MONITORING WELL MW-4 GROUNDWATER FIELD PARAMETERS**

<b>Time</b>	<b>Total Vol. Removed/ gal</b>	<b>pH</b>	<b>Temp./ F</b>	<b>Cond./ ms(cm)<sup>-1</sup></b>
1:03	0	6.81	59.05	0.297
1:06	1.4	6.95	59.33	0.300
1:12	2.8	7.06	59.63	0.293
1:18	4.2	7.09	59.53	0.294

**MONITORING WELL MW-5 GROUNDWATER FIELD PARAMETERS**

<b>Time</b>	<b>Total Vol. Removed/ gal</b>	<b>pH</b>	<b>Temp./ F</b>	<b>Cond./ ms(cm)<sup>-1</sup></b>
1:34	0	6.95	50.87	0.218
1:39	1.55	6.99	51.68	0.248
1:44	3.10	6.99	51.81	0.250
1:48	4.65	6.99	51.84	0.252

**MONITORING WELL MW-6 GROUNDWATER FIELD PARAMETERS**

<b>Time</b>	<b>Total Vol. Removed/ gal</b>	<b>pH</b>	<b>Temp./ F</b>	<b>Cond./ ms(cm)<sup>-1</sup></b>
1:55	0	7.24	54.16	0.152
2:04	1.38	7.09	56.35	0.158
2:08	2.76	7.05	57.21	0.167
2:14	4.14	7.02	57.39	0.171

**ANALYTICAL RESULTS**

**Sampling locations:** MW-1, 2, 3, 4, 5, and 6

**Analyses performed:** TPHg, BTXE, MTBE, DIPE, TAME, ETBE, TBA, TPHd, TPHmo

**Laboratories Used:** Basic Labs, Redding, California

The analytical results for the current monitoring event, conducted February 6, 2005, are presented below and graphically depicted in Figure 4. The laboratory report is included as Appendix A. The historical analytical results for all monitoring wells, since the implementation of groundwater monitoring are included as Table 2.

	<u>MW-1</u> (ppb)	<u>MW-2</u> (ppb)	<u>MW-3</u> (ppb)	<u>MW-4</u> (ppb)	<u>MW-5</u> (ppb)	<u>MW-6</u> (ppb)
<b>TPHg:</b>	ND < 50	<b>1,230</b>	<b>183</b>	<b>6,230</b>	<b>13,800</b>	ND < 50
<b>Benzene:</b>	ND < 0.5	ND < 0.5	ND < 0.5	<b>83.5</b>	<b>5.5</b>	ND < 0.5
<b>Toluene:</b>	ND < 0.5	ND < 0.5	ND < 0.5	<b>120</b>	<b>174</b>	ND < 0.5
<b>Xylenes:</b>	ND < 1.0	ND < 1.0	ND < 1.0	<b>602</b>	<b>4,090</b>	ND < 1.0
<b>Ethylbenzene:</b>	ND < 0.5	ND < 0.5	ND < 0.5	<b>343</b>	<b>407</b>	ND < 0.5
<b>MTBE:</b>	ND < 1.0	<b>1,170</b>	<b>172</b>	<b>11.5</b>	ND < 10	<b>3.6</b>
<b>DIPE:</b>	ND < 0.5	ND < 0.5	ND < 0.5	ND < 2.0	ND < 5.0	ND < 0.5
<b>TAME:</b>	ND < 0.5	<b>504</b>	<b>56.1</b>	ND < 2.0	ND < 5.0	<b>1.0</b>
<b>ETBE:</b>	ND < 0.5	<b>3.6</b>	ND < 0.5	ND < 2.0	ND < 5.0	ND < 0.5
<b>TBA:</b>	ND < 50	<b>279</b>	ND < 50	ND < 200	ND < 500	ND < 50
<b>TPHd:</b>	ND < 50	<b>208</b>	<b>51</b>	<b>729</b>	<b>1,650</b>	ND < 50
<b>TPHmo:</b>	ND < 500	<b>166</b>	<b>95</b>	<b>121</b>	<b>151</b>	<b>86</b>

ND = non-detectable

## **COMMENTS AND RECOMMENDATIONS**

On February 6, 2005, the 11<sup>th</sup> groundwater monitoring event for the six on-site monitoring wells was conducted at the Bigfoot Gas Station at 2801 Central Avenue in McKinleyville, California. A summary of the results are presented below.

- The depth to groundwater in the six wells ranged between 1.62 and 2.79 feet btoc. Groundwater flow was towards the West at a gradient of 0.01 feet per foot.
- Groundwater samples from the six on-site wells were collected and analyzed for TPHg, BTXE, five fuel oxygenates, TPHd, and TPHmo. Laboratory results reported TPHg in four wells at concentrations ranging from 183 ppb (MW-3) to 13,800 ppb (MW-5). Benzene was reported in two wells at concentrations of 5.5 ppb (MW-5) and 83.5 ppb (MW-4). Toluene was reported in two wells at concentrations of 120 ppb (MW-4) and

174 ppb (MW-5). Xylenes were reported in two wells at concentrations of 602 ppb (MW-4) and 4,090 ppb (MW-5). Ethylbenzene was reported in two wells at concentrations of 343 ppb (MW-4) and 407 ppb (MW-5). Of the fuel oxygenates, MTBE was reported in four wells at concentrations ranging between 3.6 ppb (MW-6) and 1,170 ppb (MW-2); TAME was reported in three wells at concentrations ranging between 1.0 ppb (MW-6) and 504 ppb (MW-2); ETBE was reported in one well at concentration of 3.6 ppb (MW-2); and TBA was reported in well MW-2 at a concentration of 279 ppb. No other fuel oxygenates were reported. TPHd was reported in four wells at concentrations ranging from 51 ppb (MW-3) to 1,650 ppb (MW-5). TPHmo was reported in five wells at concentrations ranging from 86 ppb (MW-6) to 166 ppb (MW-2).

Based upon these results the following observations and conclusions have been made.

- TPHg has been absent in monitoring well MW-1, since the 2<sup>nd</sup> Quarterly sampling event. With the exception of monitoring wells MW-2 and MW-6, the TPHg laboratory results for the 11<sup>th</sup> monitoring event showed a significant increase from that of previous monitoring events (November 2004), although, contaminant levels during the previous monitoring event were lower than those of prior monitoring events. See Figures 5 through 10.
- No BTXE compounds have been reported in MW-1 since the Well Installation sampling event. The BTXE compounds have been reported in wells MW-2, MW-3, and MW-6 during various sampling events, whereas, in wells MW-4 and MW-5 the BTXE compounds have consistently been reported during all sampling events to date. For historical changes in BTXE concentrations, see Figures 5 through 10.
- MTBE has been reported in wells MW-2 and MW-3 during every sampling event thus far. Concentrations fluctuate in the range of 10<sup>3</sup> ppb in MW-2 and from 10<sup>2</sup> to 10<sup>3</sup> ppb in MW-3. With the exception of a few monitoring events, MTBE has consistently been reported in wells MW-1, MW-4, and MW-6, with an general decreasing trend in concentration, particularly in well MW-6. MTBE has not been reported in MW-5 since the 2<sup>nd</sup> Quarterly

sampling event, although the elevated reporting limit may be masking its presence. See Figures 5 through 10.

- DIPE has not been reported in any wells since the inception of the monitoring program.
- TAME has consistently been reported in wells MW-2 and MW-3, since the inception of the monitoring, although concentrations in these wells have significantly fluctuated. In MW-6, TAME has been detected during multiple sampling events, with an overall decrease in concentrations. TAME has been reported in MW-1 during multiple sampling events at consistently low concentrations. TAME was reported one time in MW-5 and three times in MW-4. See Figures 5 through 10.
- ETBE has only been reported three times in well MW-2 since the inception of the monitoring program, but has never been reported in any of the other five wells.
- Historically, TBA has occasionally been reported in wells MW-2, MW-3, and MW-6, but has not been reported in MW-1, MW-4, or MW-5.
- TPHd has frequently been reported in wells MW-4, MW-5, and MW-6, with concentrations varying from  $10^2$  to  $10^3$  ppb since the inception of groundwater monitoring. TPHd was reported in MW-2 during the last seven sampling events and in MW-3 & MW-5 during the last four quarters. With the exception of the 9<sup>th</sup> quarterly monitoring event, TPHd has not been reported in MW-1.
- TPHmo has been reported twice in both MW-5 and MW-6 since the inception of the monitoring and once in wells MW-2, MW-3, and MW-4. The lower reporting limit used currently, may portray the TPHmo trend more accurately in upcoming monitoring events.
- The lead scavengers, EDC was not analyzed during the most recent monitoring event, however, it has been reported at low concentrations ( $< 2$  ppb) during multiple events in MW-3 and in MW-6 during the 4<sup>th</sup> Quarter. EDC has not been reported in any other wells

and EDB has not been reported in any well since the inception of monitoring.

- Groundwater contamination appears to have migrated to the west and offsite, however, the full lateral extent of the contamination has not been defined.

Based on the results of the February 2005 monitoring event and historical results, the following future activities are proposed.

- Groundwater monitoring will be continued until further notice. Groundwater level measurements will be collected from the six on-site monitoring wells to determine groundwater flow direction and gradient. Collected groundwater samples will be analyzed for TPHg, BTXE, five fuel oxygenates, TPHd, and TPHmo.
- A Workplan will be prepared to conduct further subsurface investigation to delineate the full extent of the groundwater contamination. The full scope of work has yet to be defined, however, at a minimum will include temporary well points for the collection of groundwater samples, with the possibility of permanent groundwater monitoring wells on the west side of Central Avenue. Due to potential access concerns, some of these sampling locations will likely be located on public right-of-ways.

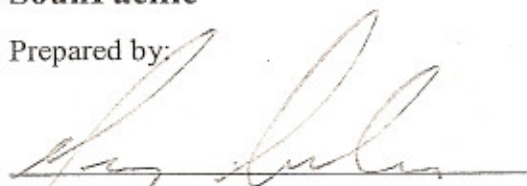
## CERTIFICATION

This report was prepared under the direct supervision of a California registered geologist at SounPacific. All information provided in this report including statements, conclusions and recommendations are based solely on field observations and analyses performed by a state-certified laboratory. SounPacific is not responsible for laboratory errors.

SounPacific promises to perform all its work in a manner that is used by members in similar professions working in the same geographic area. SounPacific will do whatever is reasonable to ensure that data collection is accurate. Please note however, that rain, buried utilities, and other factors can influence groundwater depths, directions and other factors beyond what SounPacific could reasonably determine.

### **SounPacific**

Prepared by:

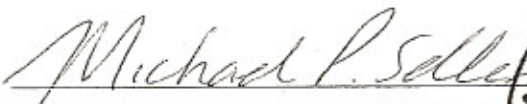


Greg Sounhein, REA # 07994

Project Manager



Reviewed by:



Michael Sellens, RG # 4714, REA # 07890

Principal Geologist



## **ATTACHMENTS**

### **TABLES & CHART**

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- Figure 1: Aerial / Topo Map  
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Figure 9: MW-5 Hydrocarbon Concentrations vs. Time  
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### **APPENDICES**

- Appendix A: Laboratory Report and Chain-of-Custody Form  
Appendix B: Standard Operating Procedures  
Appendix C: Field Notes

## **Tables & Chart**

**Table 1**  
**Water Levels**  
 Bigfoot Gas  
 2801 Central Avenue  
 McKinleyville, California 95519

Sample Location	Date	Depth to Bottom/ Feet BGS	Survey Height/ Feet Above MSL	Depth to Water/ Feet BGS	Adjusted Elevation/ Feet Above MSL
MW-1	5/1/2002	11.66	111.57	1.54	110.03
	5/30/2002	11.67	111.57	2.43	109.14
	7/3/2002	11.63	111.57	2.65	108.92
	8/3/2002	11.62	111.57	3.40	108.17
	9/4/2002	11.64	111.57	3.90	107.67
	10/4/2002	11.70	111.57	4.25	107.32
	11/4/2002	11.65	111.57	4.36	107.21
	12/2/2002	12.63	111.57	3.61	107.96
	1/6/2003	11.66	111.57	1.22	110.35
	2/5/2003	11.67	111.57	1.31	110.26
	3/7/2003	11.67	111.57	1.67	109.90
	4/8/2003	11.67	111.57	1.00	110.57
	5/12/2003	11.67	111.57	1.32	110.25
	8/2/2003	11.88	111.57	3.11	108.46
	11/8/2003	11.88	111.57	2.57	109.00
	2/5/2004	11.88	111.57	1.21	110.36
	5/4/2004	11.88	111.57	2.03	109.54
	8/9/2004	11.82	111.57	3.71	107.86
	11/5/2004	11.83	111.57	2.08	109.49
	2/6/2005	11.83	111.57	1.65	109.92
MW-2	5/1/2002	12.00	113.03	2.75	110.28
	5/30/2002	11.85	113.03	3.63	109.40
	7/3/2002	11.87	113.03	4.20	108.83
	8/3/2002	11.87	113.03	4.68	108.35
	9/4/2002	11.87	113.03	5.22	107.81
	10/4/2002	9.71	113.03	5.64	107.39
	11/4/2002	11.82	113.03	5.67	107.36
	12/2/2002	11.83	113.03	4.83	108.20
	1/6/2003	11.86	113.03	2.46	110.57
	2/5/2003	10.22	113.03	2.52	110.51
	3/7/2003	11.72	113.03	2.71	110.32
	4/8/2003	11.72	113.03	2.22	110.81
	5/12/2003	11.72	113.03	2.53	110.50
	8/2/2003	11.98	113.03	4.31	108.72
	11/8/2003	11.98	113.03	3.95	109.08
	2/5/2004	11.98	113.03	2.44	110.59
	5/4/2004	11.98	113.03	3.24	109.79
	8/9/2004	11.97	113.03	5.07	107.96
	11/5/2004	12.04	113.03	3.26	109.77
	2/6/2005	12.04	113.03	2.79	110.24

**Table 1 (cont.)****Water Levels**

Bigfoot Gas

2801 Central Avenue

McKinleyville, Californian 95519

Sample Location	Date	Depth to Bottom/ Feet BGS	Survey Height/ Feet Above MSL	Depth to Water/ Feet BGS	Adjusted Elevation/ Feet Above MSL
MW-3	5/1/2002	11.39	112.13	2.15	109.98
	5/30/2002	11.24	112.13	2.94	109.19
	7/3/2002	11.25	112.13	3.41	108.72
	8/3/2002	11.24	112.13	3.84	108.29
	9/4/2002	11.21	112.13	4.32	107.81
	10/4/2002	11.22	112.13	4.69	107.44
	11/4/2002	11.22	112.13	4.83	107.30
	12/2/2002	11.23	112.13	4.02	108.11
	1/6/2003	11.25	112.13	1.91	110.22
	2/5/2003	11.25	112.13	2.00	110.13
	3/7/2003	11.29	112.13	2.30	109.83
	4/8/2003	11.29	112.13	1.69	110.44
	5/12/2003	11.29	112.13	1.99	110.14
	8/2/2003	11.46	112.13	3.57	108.56
	11/8/2003	11.46	112.13	3.00	109.13
	2/5/2004	11.46	112.13	1.91	110.22
	5/4/2004	11.46	112.13	2.61	109.52
	8/9/2004	11.46	112.13	4.14	107.99
	11/5/2004	11.40	112.13	2.67	109.46
	2/6/2005	11.40	112.13	2.30	109.83
MW-4	5/1/2002	11.34	112.76	2.44	110.32
	5/30/2002	11.14	112.76	3.28	109.48
	7/3/2002	11.11	112.76	3.84	108.92
	8/3/2002	11.14	112.76	4.32	108.44
	9/4/2002	11.12	112.76	4.86	107.90
	10/4/2002	11.12	112.76	5.24	107.52
	11/4/2002	11.05	112.76	5.36	107.40
	12/2/2002	11.08	112.76	4.51	108.25
	1/6/2003	11.05	112.76	2.04	110.72
	2/5/2003	11.06	112.76	2.17	110.59
	3/7/2003	11.24	112.76	2.51	110.25
	4/8/2003	11.24	112.76	1.69	111.07
	5/12/2003	11.24	112.76	3.14	109.62
	8/2/2003	11.32	112.76	4.03	108.73
	11/8/2003	11.32	112.76	3.31	109.45
	2/5/2004	11.32	112.76	2.03	110.73
	5/4/2004	11.32	112.76	2.85	109.91
	8/9/2004	11.32	112.76	4.64	108.12
	11/5/2004	11.20	112.76	2.87	109.89
	2/6/2005	11.27	112.76	2.51	110.25

**Table 1 (cont.)****Water Levels**

Bigfoot Gas

2801 Central Avenue

McKinleyville, California 95519

Sample Location	Date	Depth to Bottom/ Feet BGS	Survey Height/ Feet Above MSL	Depth to Water/ Feet BGS	Adjusted Elevation/ Feet Above MSL
MW-5	5/1/2002	11.10	112.62	1.43	111.19
	5/30/2002	11.11	112.62	2.71	109.91
	7/3/2002	11.12	112.62	3.31	109.31
	8/3/2002	11.14	112.62	3.85	108.77
	9/4/2002	11.12	112.62	4.37	108.25
	10/4/2002	11.15	112.62	4.85	107.77
	11/4/2002	11.15	112.62	4.97	107.65
	12/2/2002	11.13	112.62	4.02	108.60
	1/6/2003	11.15	112.62	1.11	111.51
	2/5/2003	11.18	112.62	1.23	111.39
	3/7/2003	11.15	112.62	1.70	110.92
	4/8/2003	11.15	112.62	0.95	111.67
	5/12/2003	11.15	112.62	1.33	111.29
	8/2/2003	11.36	112.62	3.53	109.09
	11/8/2003	11.36	112.62	2.67	109.95
	2/5/2004	11.36	112.62	1.10	111.52
	5/4/2004	11.36	112.62	2.18	110.44
	8/9/2004	11.35	112.62	4.17	108.45
	11/5/2004	11.34	112.62	2.19	110.43
	2/6/2005	11.32	112.62	1.62	111.00
MW-6	5/1/2002	10.92	112.38	2.31	110.07
	5/30/2002	10.91	112.38	3.13	109.25
	7/3/2002	10.91	112.38	3.64	108.74
	8/3/2002	10.92	112.38	4.09	108.29
	9/4/2002	10.93	112.38	4.61	107.77
	10/4/2002	10.96	112.38	4.99	107.39
	11/4/2002	10.92	112.38	5.05	107.33
	12/2/2002	10.93	112.38	4.27	108.11
	1/6/2003	10.93	112.38	2.05	110.33
	2/5/2003	10.95	112.38	2.14	110.24
	3/7/2003	10.95	112.38	2.46	109.92
	4/8/2003	10.95	112.38	1.82	110.56
	5/12/2003	10.95	112.38	3.12	109.26
	8/2/2003	11.13	112.38	3.81	108.57
	11/8/2003	11.13	112.38	3.03	109.35
	2/5/2004	11.13	112.38	2.07	110.31
	5/4/2004	11.13	112.38	2.75	109.63
	8/9/2004	11.18	112.38	4.39	107.99
	11/5/2004	11.03	112.38	2.76	109.62
	2/6/2005	11.04	112.38	2.44	109.94

Notes:

Bgs: Below Ground Surface

MSL: Mean Sea Level

**Table 2**  
**Groundwater Analytical Results from Monitoring Wells**

Bigfoot Gas  
2801 Central Avenue  
McKinleyville, California 95519

Sample Location	Sample Event	Annual Quarter	Sample Date	TPH <sub>g</sub> (ppb)	Benzene (ppb)	Toluene (ppb)	Xylenes (ppb)	Ethylbenzene (ppb)	MTBE (ppb)	DIPE (ppb)	TAME (ppb)	ETBE (ppb)	TBA (ppb)	TPH <sub>d</sub> (ppb)	TPH <sub>mo</sub> (ppb)	EDC (ppb)	EDB (ppb)
MW-1	Well Installation	2nd Quarter	5/1/2002	ND < 50	ND < 0.3	<b>0.3</b>	ND < 0.6	ND < 0.3	<b>10.5</b>	ND < 0.5	ND < 0.5	ND < 0.5	ND < 100	ND < 50	ND < 50	----	----
	1st Quarterly	3rd Quarter	8/3/2002	<b>91</b>	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	<b>114</b>	ND < 0.5	<b>7.5</b>	ND < 0.5	ND < 100	ND < 50	ND < 50	----	----
	2nd Quarterly	4th Quarter	11/4/2002	<b>90.4</b>	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	<b>94.7</b>	ND < 0.5	<b>7.6</b>	ND < 0.5	ND < 50	ND < 50	ND < 50	ND < 0.5	ND < 0.5
	3rd Quarterly	1st Quarter	2/5/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	4th Quarterly	2nd Quarter	5/12/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	5th Quarterly	3rd Quarter	8/2/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>23</b>	ND < 0.5	<b>1.0</b>	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	6th Quarterly	4th Quarter	11/8/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>88</b>	ND < 0.5	<b>3.5</b>	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	7th Quarterly	1st Quarter	2/5/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>0.5</b>	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	8th Quarterly	2nd Quarter	5/4/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>0.5</b>	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	9th Quarterly	3rd Quarter	8/9/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1.5	ND < 0.5	<b>34.0</b>	ND < 0.5	<b>1.2</b>	ND < 0.5	ND < 5.0	<b>160</b>	ND < 500	ND < 0.5	ND < 0.5
	10th Quarterly	4th Quarter	11/5/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1.5	ND < 0.5	<b>14</b>	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	11th Quarterly	1st Quarter	2/6/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50.0	ND < 50	ND < 50	----	----
MW-2	Well Installation	2nd Quarter	5/1/2002	<b>498</b>	ND < 0.3	ND < 0.3	<b>3.9</b>	<b>1.3</b>	<b>1,380</b>	ND < 0.5	<b>552</b>	ND < 0.5	ND < 100	ND < 50	ND < 50	----	----
	1st Quarterly	3rd Quarter	8/3/2002	<b>8,870</b>	<b>15.7</b>	<b>0.5</b>	<b>3.9</b>	<b>2.2</b>	<b>8,160</b>	ND < 0.5	<b>3,460</b>	ND < 0.5	ND < 100	ND < 50	ND < 50	----	----
	2nd Quarterly	4th Quarter	11/4/2002	<b>674</b>	<b>28.3</b>	ND < 0.3	ND < 0.6	ND < 0.3	<b>1,130</b>	ND < 0.5	<b>526</b>	ND < 0.5	ND < 50	ND < 50	ND < 50	ND < 0.5	ND < 0.5
	3rd Quarterly	1st Quarter	2/5/2003	<b>1,200</b>	<b>0.5</b>	ND < 0.5	ND < 1	ND < 0.5	<b>1,900</b>	ND < 0.5	<b>800</b>	<b>4.9</b>	<b>690</b>	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	4th Quarterly	2nd Quarter	5/12/2003	<b>540</b>	ND < 50	ND < 50	ND < 100	ND < 50	<b>730</b>	ND < 50	<b>140</b>	ND < 50	ND < 500	ND < 50	ND < 500	ND < 50	ND < 50
	5th Quarterly	3rd Quarter	8/2/2003	ND < 5,000	ND < 50	ND < 50	ND < 100	ND < 50	<b>1,200</b>	ND < 50	<b>430</b>	ND < 50	ND < 500	<b>140</b>	ND < 500	ND < 50	ND < 50
	6th Quarterly	4th Quarter	11/8/2003	<b>790</b>	ND < 50	ND < 50	ND < 100	ND < 50	<b>4,200</b>	ND < 50	<b>1,800</b>	ND < 50	ND < 500	<b>150</b>	ND < 500	ND < 50	ND < 50
	7th Quarterly	1st Quarter	2/5/2004	<b>440</b>	ND < 50	<b>85</b>	<b>120</b>	ND < 50	<b>1,700</b>	ND < 50	<b>860</b>	ND < 50	ND < 500	<b>93</b>	ND < 500	ND < 50	ND < 50
	8th Quarterly	2nd Quarter	5/4/2004	<b>1,300</b>	ND < 5.0	ND < 5.0	ND < 10.0	ND < 5.0	<b>1,200</b>	ND < 50	<b>530</b>	ND < 50	ND < 500	<b>190</b>	ND < 500	ND < 50	ND < 50
	9th Quarterly	3rd Quarter	8/9/2004	<b>1,900</b>	ND < 5.0	ND < 5.0	ND < 15.0	ND < 5.0	<b>2,700</b>	ND < 5.0	<b>1,100</b>	<b>7.2</b>	<b>730</b>	<b>420</b>	ND < 500	ND < 5.0	ND < 5.0
	10th Quarterly	4th Quarter	11/5/2004	<b>1,400</b>	<b>5.8</b>	ND < 5.0	ND < 15.0	ND < 5.0	<b>970</b>	ND < 5.0	<b>460</b>	ND < 5.0	<b>230</b>	<b>160</b>	ND < 500	ND < 5.0	ND < 5.0
	11th Quarterly	1st Quarter	2/6/2005	<b>1,230</b>	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>1,170</b>	ND < 0.5	<b>504</b>	<b>3.6</b>	<b>279</b>	<b>208</b>	<b>166</b>	----	----
MW-3	Well Installation	2nd Quarter	5/1/2002	<b>102</b>	<b>2.9</b>	ND < 0.3	<b>5.0</b>	<b>0.8</b>	<b>153</b>	ND < 0.5	<b>46.3</b>	ND < 0.5	ND < 100	ND < 50	ND < 50	----	----
	1st Quarterly	3rd Quarter	8/3/2002	<b>8,260</b>	<b>383</b>	<b>145</b>	<b>1,970</b>	<b>420</b>	<b>4,000</b>	ND < 0.5	<b>1,580</b>	ND < 0.5	ND < 100	<b>916</b>	ND < 50	----	----
	2nd Quarterly	4th Quarter	11/4/2002	<b>537</b>	<b>30.8</b>	<b>0.7</b>	<b>39.5</b>	<b>24.9</b>	<b>928</b>	ND < 0.5	<b>358</b>	ND < 0.5	ND < 50	ND < 50	ND < 50	ND < 0.5	ND < 0.5
	3rd Quarterly	1st Quarter	2/5/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	<b>100</b>	ND < 0.5	<b>27</b>	ND < 0.5	<b>17</b>	ND < 50	ND < 500	<b>1.6</b>	ND < 0.5
	4th Quarterly	2nd Quarter	5/12/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	<b>28</b>	ND < 0.5	<b>5.5</b>	ND < 0.5	ND < 5.0	ND < 50	ND < 500	<b>1.2</b>	ND < 0.5
	5th Quarterly	3rd Quarter	8/2/2003	<b>6,400</b>	<b>75</b>	ND < 5.0	<b>1,000</b>	<b>460</b>	<b>1,200</b>	ND < 5.0	<b>540</b>	ND < 5.0	<b>530</b>	ND < 50	ND < 500	ND < 5.0	ND < 5.0
	6th Quarterly	4th Quarter	11/8/2003	<b>52</b>	ND < 0.5	ND < 0.5	<b>1.2</b>	<b>0.5</b>	<b>120</b>	ND < 0.5	<b>68</b>	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	7th Quarterly	1st Quarter	2/5/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1	ND < 0.5	<b>40</b>	ND < 0.5	<b>9.4</b>	ND < 0.5	ND < 5.0	ND < 50	ND < 500	<b>0.9</b>	ND < 0.5
	8th Quarterly	2nd Quarter	5/4/2004	<b>82</b>	ND < 0.5	ND < 0.5	<b>0.5</b>	ND < 0.5	<b>57</b>	ND < 0.5	<b>32</b>	ND < 0.5	ND < 5.0	<b>55</b>	ND < 500	ND < 0.5	ND < 0.5
	9th Quarterly	3rd Quarter	8/9/2004	<b>970</b>	<b>6.0</b>	ND < 0.5	ND < 1.5	<b>3.6</b>	<b>1,500</b>	ND < 0.5	<b>530</b>	ND < 0.5	<b>90</b>	<b>250</b>	ND < 500	<b>1.5</b>	ND < 0.5
	10th Quarterly	4th Quarter	11/5/2004	<b>100</b>	ND < 0.5	ND < 0.5	ND < 1.5	ND < 0.5	<b>63</b>	ND < 0.5	<b>19</b>	ND < 0.5	ND < 5.0	<b>240</b>	ND < 500	ND < 0.5	ND < 0.5
	11th Quarterly	1st Quarter	2/6/2005	<b>183</b>	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	<b>172</b>	ND < 0.5	<b>56.1</b>	ND < 0.5	ND < 50	<b>51</b>	<b>95</b>	----	----

TPHg: Total petroleum hydrocarbons as gasoline

MTBE: Methyl tertiary butyl ether

DIPE: Diisopropyl ether

TAME: Tertiary amyl methyl ether

TPHd: Total petroleum hydrocarbons as diesel

TBA: Tertiary butanol

ETBE: Ethyl tertiary butyl ether

TPHmo: Total petroleum hydrocarbons as motor oil

ppb: parts per billion = µg/l = .001 mg/l = 0.001 ppm.

ND: Not detected. Sample was detected at or below the method detection limit as shown.

**Table 2 (cont.)**  
**Groundwater Analytical Results from Monitoring Wells**

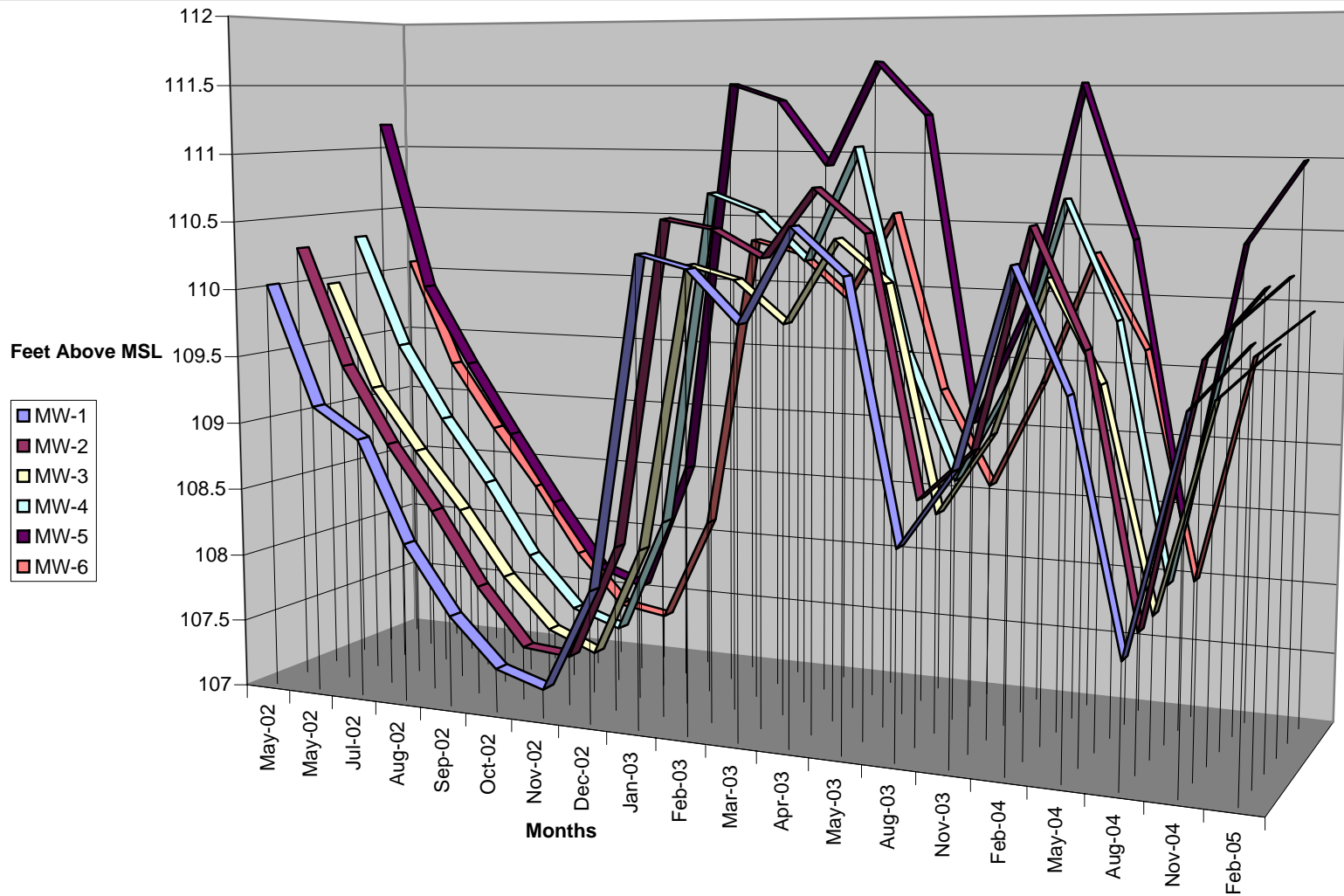
Bigfoot Gas  
2801 Central Avenue  
McKinleyville, California 95519

Sample Location	Sample Event	Annual Quarter	Sample Date	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Xylenes (ppb)	Ethylbenzene (ppb)	MTBE (ppb)	DIPE (ppb)	TAME (ppb)	ETBE (ppb)	TBA (ppb)	TPHd (ppb)	TPHmo (ppb)	EDC (ppb)	EDB (ppb)
MW-4	Well Installation	2nd Quarter	5/1/2002	7,970	157	356	1,270	483	ND < 20	ND < 5	ND < 5	ND < 5	ND < 1,000	489	ND < 50	----	----
	1st Quarterly	3rd Quarter	8/3/2002	9,150	193	720	2,430	1,080	53	ND < 15	ND < 15	ND < 15	ND < 5,000	2,770	ND < 50	----	----
	2nd Quarterly	4th Quarter	11/4/2002	6,090	207	343	712	530	ND < 2.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50	159	ND < 50	ND < 0.5	ND < 0.5
	3rd Quarterly	1st Quarter	2/5/2003	20,000	170	120	890	600	ND < 5.0	ND < 5.0	ND < 5.0	ND < 5.0	ND < 50	2,000	ND < 500	ND < 5.0	ND < 5.0
	4th Quarterly	2nd Quarter	5/12/2003	6,200	96	77	248	220	ND < 50	ND < 50	ND < 50	ND < 50	ND < 500	680	ND < 500	ND < 50	ND < 50
	5th Quarterly	3rd Quarter	8/2/2003	7,700	130	59	406	470	31	ND < 5.0	20	ND < 5.0	ND < 50	ND < 50	ND < 500	ND < 5.0	ND < 5.0
	6th Quarterly	4th Quarter	11/8/2003	7,900	260	190	385	480	56	ND < 5.0	ND < 5.0	ND < 5.0	ND < 50	500	ND < 500	ND < 5.0	ND < 5.0
	7th Quarterly	1st Quarter	2/5/2004	7,600	180	110	334	460	29	ND < 5.0	ND < 5.0	ND < 5.0	ND < 50	ND < 50	ND < 500	ND < 5.0	ND < 5.0
	8th Quarterly	2nd Quarter	5/4/2004	8,000	130	140	504	420	19	ND < 5.0	ND < 5.0	ND < 5.0	ND < 50	1,300	ND < 500	ND < 5.0	ND < 5.0
	9th Quarterly	3rd Quarter	8/9/2004	5,600	120	44	302	360	67	ND < 5.0	13	ND < 5.0	ND < 50	850	ND < 500	ND < 5.0	ND < 5.0
	10th Quarterly	4th Quarter	11/5/2004	58	1.0	ND < 0.5	ND < 1.5	ND < 0.5	6.7	ND < 0.5	2.8	ND < 0.5	ND < 5.0	120	ND < 500	ND < 0.5	ND < 0.5
MW-5	11th Quarterly	1st Quarter	2/6/2005	6,230	83.5	120	602	343	11.5	ND < 2.0	ND < 2.0	ND < 2.0	ND < 200	729	121	----	----
	Well Installation	2nd Quarter	5/1/2002	63,800	ND < 150	1,270	19,500	1,720	ND < 1,000	ND < 250	ND < 250	ND < 250	ND < 50,000	4,420	396	----	----
	1st Quarterly	3rd Quarter	8/3/2002	30,500	ND < 15	486	17,700	1,760	ND < 25	ND < 15	ND < 15	ND < 15	ND < 5,000	9,630	ND < 50	----	----
	2nd Quarterly	4th Quarter	11/4/2002	81,000	789	ND < 300	24,600	3,710	2,330	ND < 500	1,570	ND < 500	ND < 100,000	3,870	ND < 50	ND < 500	ND < 500
	3rd Quarterly	1st Quarter	2/5/2003	78,000	51	1,600	16,800	1,600	ND < 50	ND < 50	ND < 50	ND < 50	ND < 500	ND < 50	ND < 500	ND < 50	ND < 50
	4th Quarterly	2nd Quarter	5/12/2003	43,000	ND < 50	790	13,400	1,200	ND < 50	ND < 50	ND < 50	ND < 50	ND < 500	4,100	ND < 500	ND < 50	ND < 50
	5th Quarterly	3rd Quarter	8/2/2003	17,000	ND < 50	120	3,890	400	ND < 50	ND < 50	ND < 50	ND < 50	ND < 500	ND < 50	ND < 500	ND < 50	ND < 50
	6th Quarterly	4th Quarter	11/8/2003	43,000	ND < 50	760	16,100	1,500	ND < 50	ND < 50	ND < 50	ND < 50	ND < 500	4,100	ND < 500	ND < 50	ND < 50
	7th Quarterly	1st Quarter	2/5/2004	39,000	50	1,400	22,500	2,000	ND < 50	ND < 50	ND < 50	ND < 50	ND < 500	ND < 50	ND < 500	ND < 50	ND < 50
	8th Quarterly	2nd Quarter	5/4/2004	54,000	ND < 50	720	12,800	1,300	ND < 50	ND < 50	ND < 50	ND < 50	ND < 500	19,000	ND < 500	ND < 50	ND < 50
	9th Quarterly	3rd Quarter	8/9/2004	37,000	ND < 50	320	10,000	1,100	ND < 50	ND < 50	ND < 50	ND < 50	ND < 500	8,500	ND < 500	ND < 50	ND < 50
	10th Quarterly	4th Quarter	11/5/2004	9,800	ND < 50	68	1,940	170	ND < 50	ND < 50	ND < 50	ND < 50	ND < 500	890	ND < 500	ND < 50	ND < 50
MW-6	11th Quarterly	1st Quarter	2/6/2005	13,800	5.5	174	4,090	407	ND < 10	ND < 5.0	ND < 5.0	ND < 5.0	ND < 500	1,650	151	----	----
	Well Installation	2nd Quarter	5/1/2002	3,750	845	576	1,070	155	980	ND < 0.5	791	ND < 0.5	ND < 100	ND < 50	ND < 50	----	----
	1st Quarterly	3rd Quarter	8/3/2002	11,800	508	62	8,630	1,640	750	ND < 15	300	ND < 15	ND < 5,000	1,900	ND < 50	----	----
	2nd Quarterly	4th Quarter	11/4/2002	9,480	535	35.2	3,420	743	1,330	ND < 0.5	558	ND < 0.5	ND < 50	190	ND < 50	ND < 0.5	ND < 0.5
	3rd Quarterly	1st Quarter	2/5/2003	4,500	20	ND < 5.0	583	190	ND < 5.0	ND < 5.0	17	ND < 5.0	ND < 50	1,200	ND < 500	ND < 5.0	ND < 5.0
	4th Quarterly	2nd Quarter	5/12/2003	2,200	22	1.2	244	160	68	ND < 0.5	14	ND < 0.5	60	280	ND < 500	0.9	ND < 0.5
	5th Quarterly	3rd Quarter	8/2/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	2,500	ND < 0.5	ND < 0.5
	6th Quarterly	4th Quarter	11/8/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	1.3	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	7th Quarterly	1st Quarter	2/5/2004	110	4.2	ND < 0.5	ND < 1.0	ND < 0.5	16	ND < 0.5	5.6	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	8th Quarterly	2nd Quarter	5/4/2004	2,200	25	2.4	200.5	4.0	69	ND < 0.5	17	ND < 0.5	27	590	ND < 500	ND < 0.5	ND < 0.5
	9th Quarterly	3rd Quarter	8/9/2004	880	14	ND < 5.0	ND < 1.5	ND < 5.0	220	ND < 5.0	16	ND < 5.0	280	470	ND < 500	ND < 5.0	ND < 5.0
	10th Quarterly	4th Quarter	11/5/2004	110	3.6	ND < 0.5	ND < 1.5	ND < 0.5	16	ND < 0.5	3.2	ND < 0.5	ND < 5.0	1,000	ND < 500	ND < 0.5	ND < 0.5
MW-6	11th Quarterly	1st Quarter	2/6/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	3.6	ND < 0.5	1.0	ND < 0.5	ND < 50	ND < 50	86	----	----

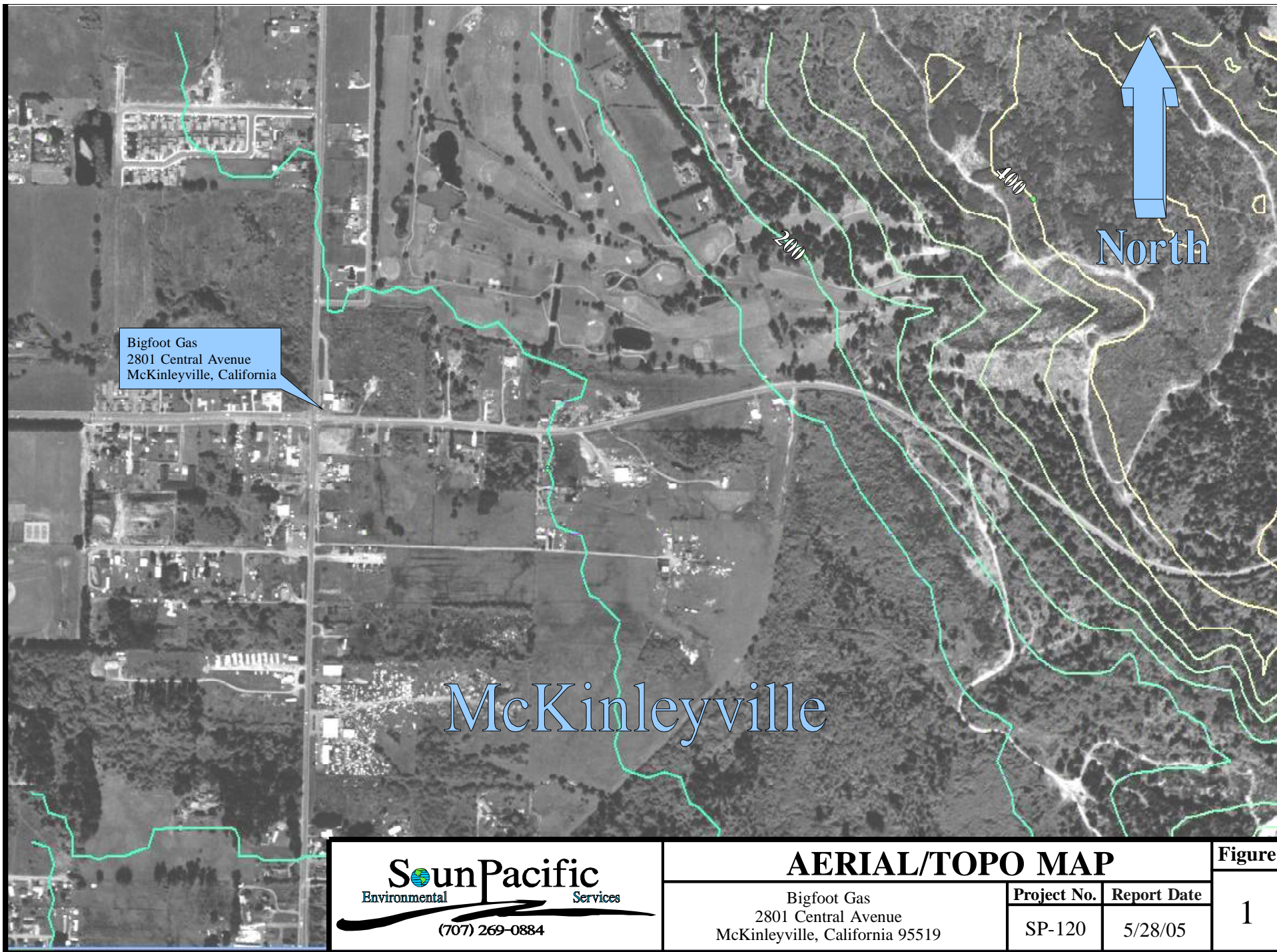
TPHg: Total petroleum hydrocarbons as gasoline  
MTBE: Methyl tertiary butyl ether  
DIPE: Diisopropyl ether  
TAME: Tertiary amyl methyl ether  
TPHd: Total petroleum hydrocarbons as diesel

TBA: Tertiary butanol  
ETBE: Ethyl tertiary butyl ether  
TPHmo: Total petroleum hydrocarbons as motor oil  
ppb: parts per billion = µg/l = .001 mg/l = 0.001 ppm.  
ND: Not detected. Sample was detected at or below the method detection limit as shown.

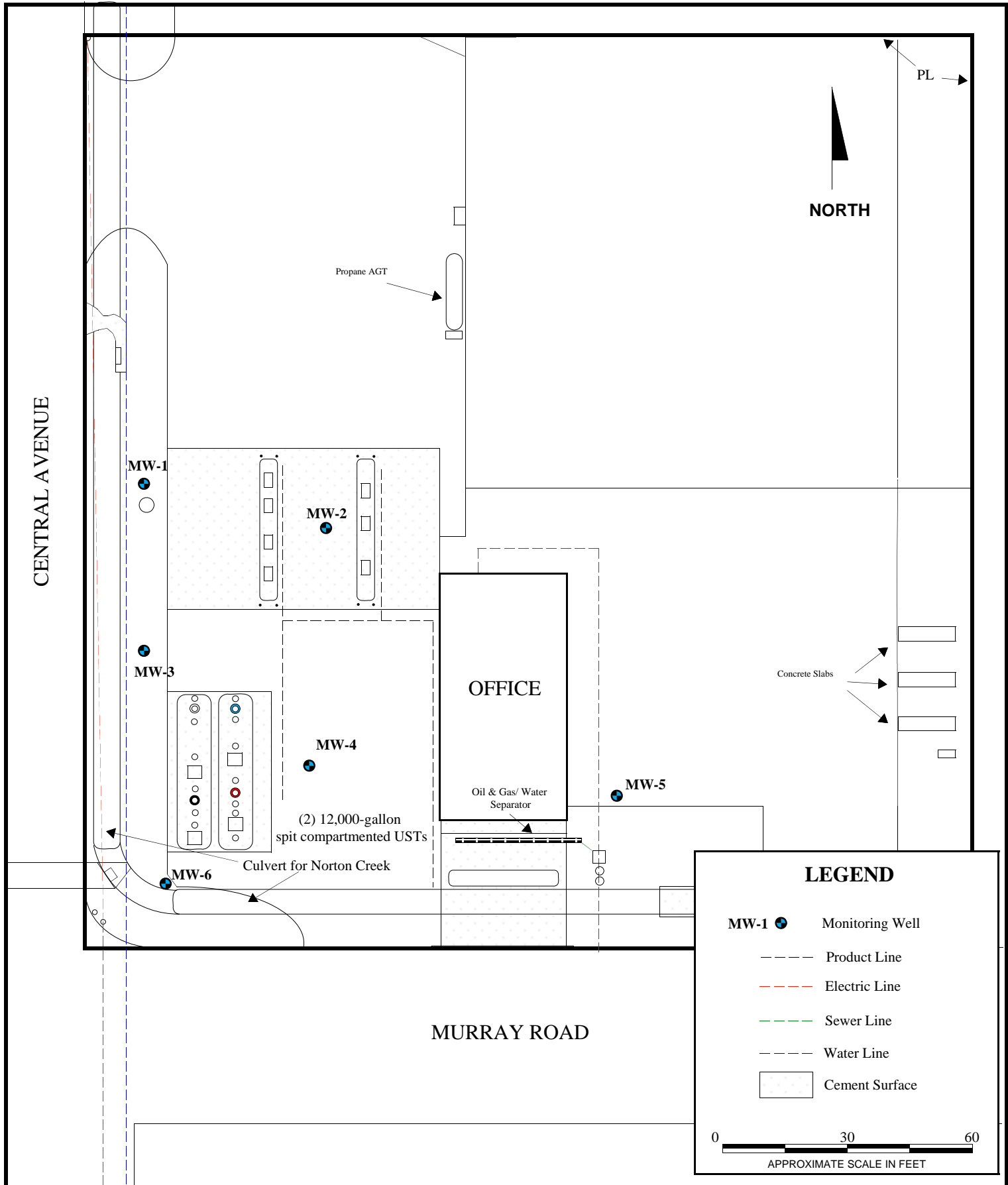
**Chart 1**  
**Hydrograph**  
Bigfoot Gas  
2801 Central Avenue  
McKinleyville, California 95519



# Figures



	<b>AERIAL/TOPO MAP</b>		<b>Figure</b>
	Bigfoot Gas 2801 Central Avenue McKinleyville, California 95519	<b>Project No.</b>	<b>Report Date</b>
		SP-120	5/28/05
			1



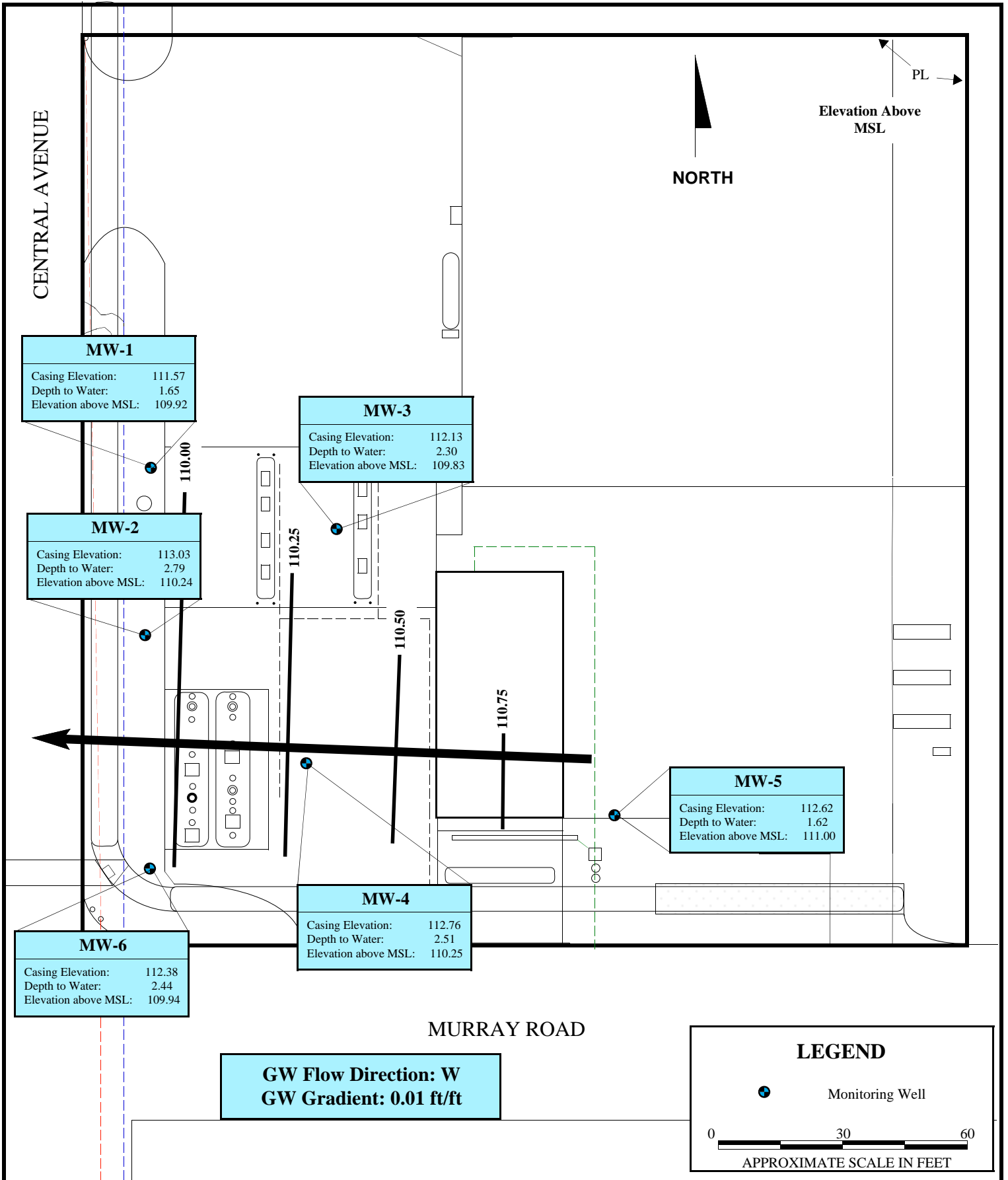
# **SITE PLAN**

Bigfoot Gas  
2801 Central Avenue  
McKinleyville, California 95519

Project No.  
SP-120

Report Date  
5/28/05

Figure  
2



## GROUNDWATER LEVEL CONTOUR MAP FEBRUARY 2005

Figure

3



Bigfoot Gas  
2801 Central Avenue  
McKinleyville, California 95519

Project No.  
SP-120

Report Date  
5/28/05

CENTRAL AVENUE

PL

NORTH

**Groundwater Results  
MW-1**

All Results Non-Detect

**Groundwater Results  
MW-2**

TPHg	1,230	ppb
MTBE	1,170	ppb
TAME	504	ppb
ETBE	3.6	ppb
TBA	279	ppb
TPHd	208	ppb
TPHmo	166	ppb

**Groundwater Results  
MW-3**

TPHg	183	ppb
MTBE	172	ppb
TAME	56.1	ppb
TPHd	51	ppb
TPHmo	95	ppb

**Groundwater Results  
MW-5**

TPHg	13,800	ppb
BTXE	4,676.5	ppb
TPHd	1,650	ppb
TPHmo	151	ppb

**Groundwater Results  
MW-4**

TPHg	6,230	ppb
BTXE	1,148.5	ppb
MTBE	11.5	ppb
TPHd	729	ppb
TPHmo	121	ppb


**Groundwater Results  
MW-6**

MTBE	3.6	ppb
TAME	1.0	ppb
TPHmo	86	ppb

OFFICE

MURRAY ROAD

**LEGEND**

 Monitoring Well

0 30 60  
APPROXIMATE SCALE IN FEET



**GROUNDWATER ANALYTICAL RESULTS**

Bigfoot Gas  
2801 Central Avenue  
McKinleyville, California 95519

Project No.

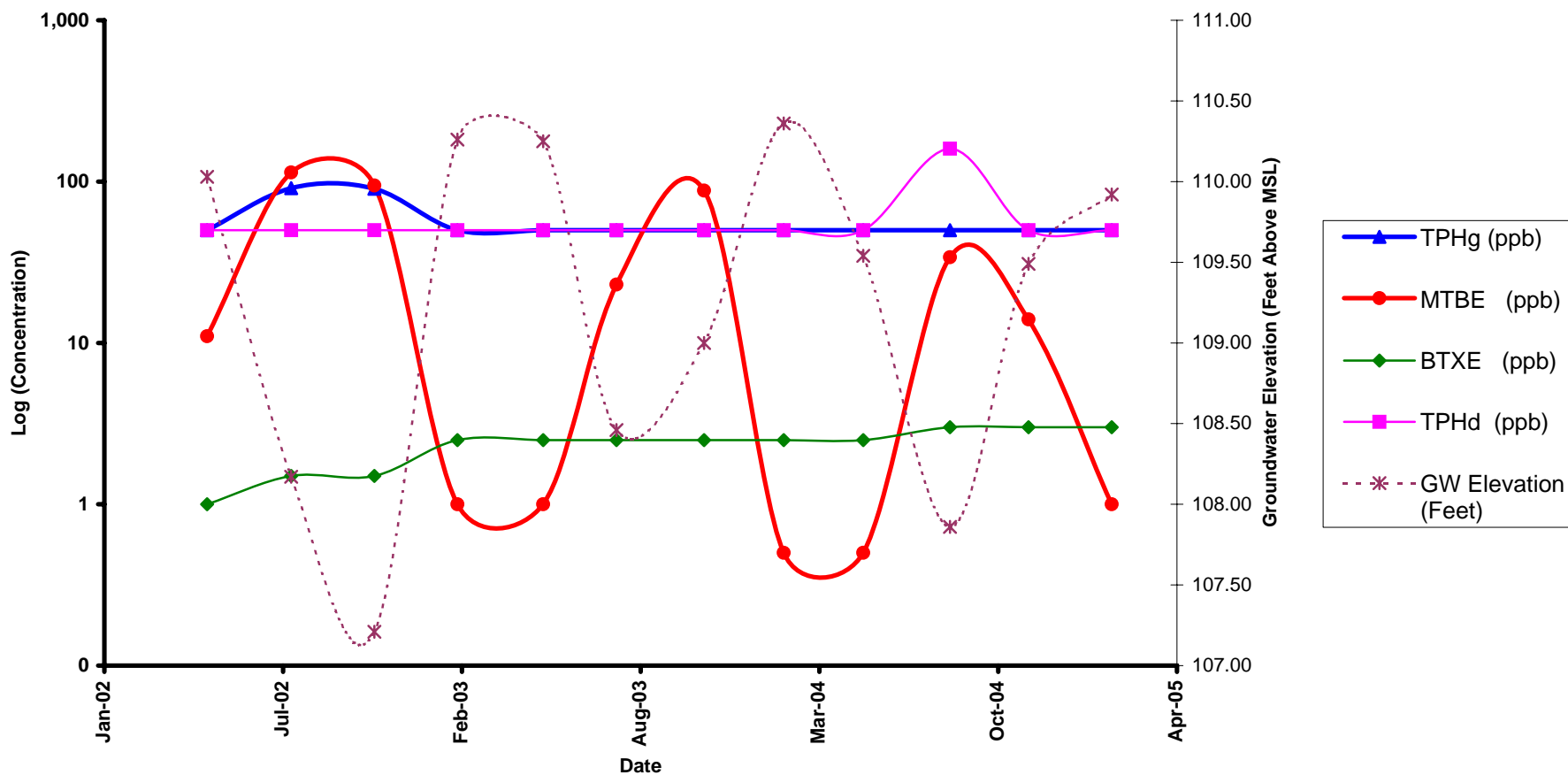
SP-120

Report Date

5/28/05

Figure

4



### MW-1 HYDROCARBON CONCENTRATIONS VS. TIME

Bigfoot Gas  
 2801 Central Avenue  
 McKinleyville, California 95519

Project No.

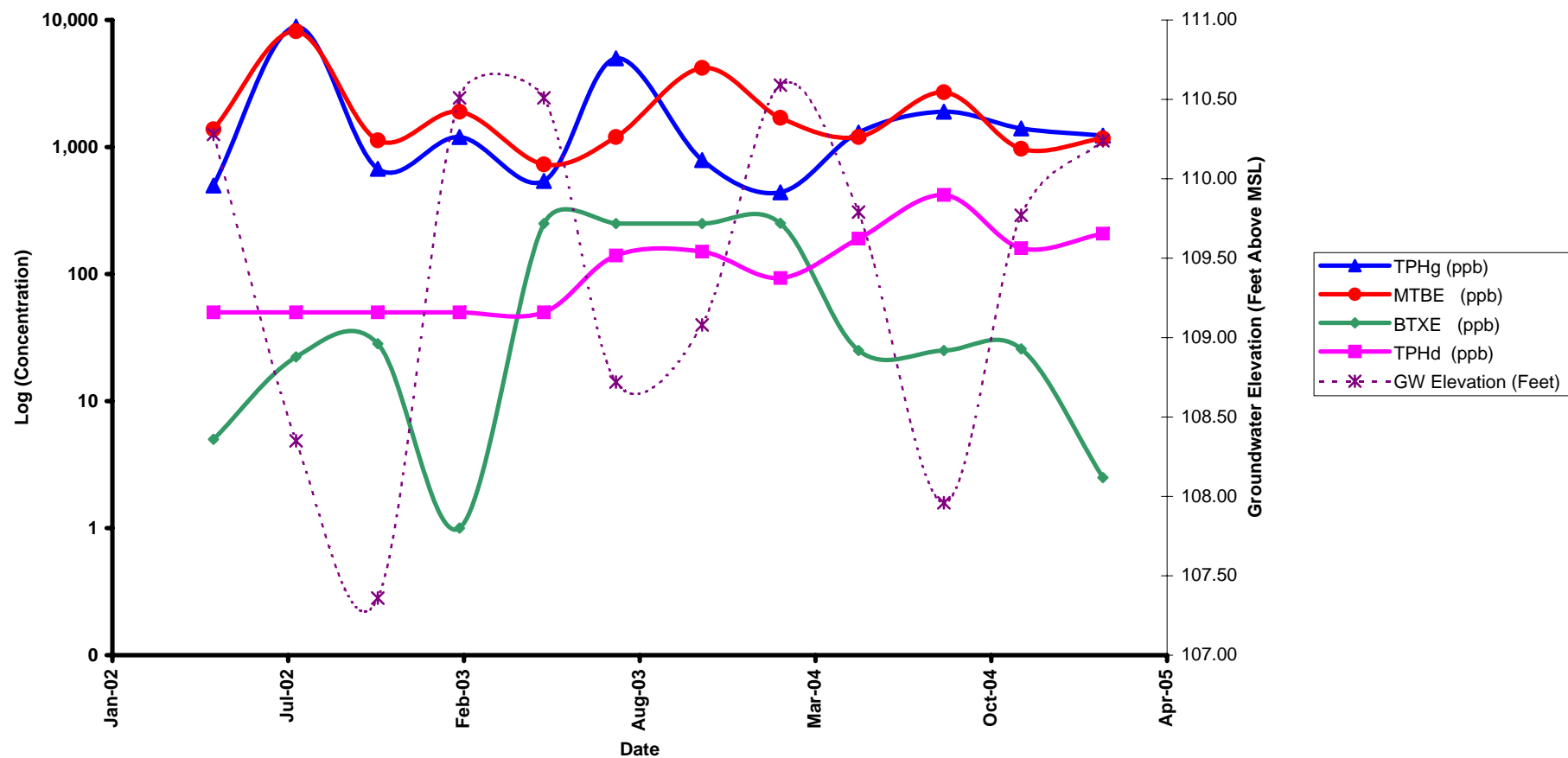
SP-120

Date

5/28/2005

Figure

5



## MW-2 HYDROCARBON CONCENTRATIONS VS. TIME

Bigfoot Gas  
2801 Central Avenue  
McKinleyville, California 95519

Project No.

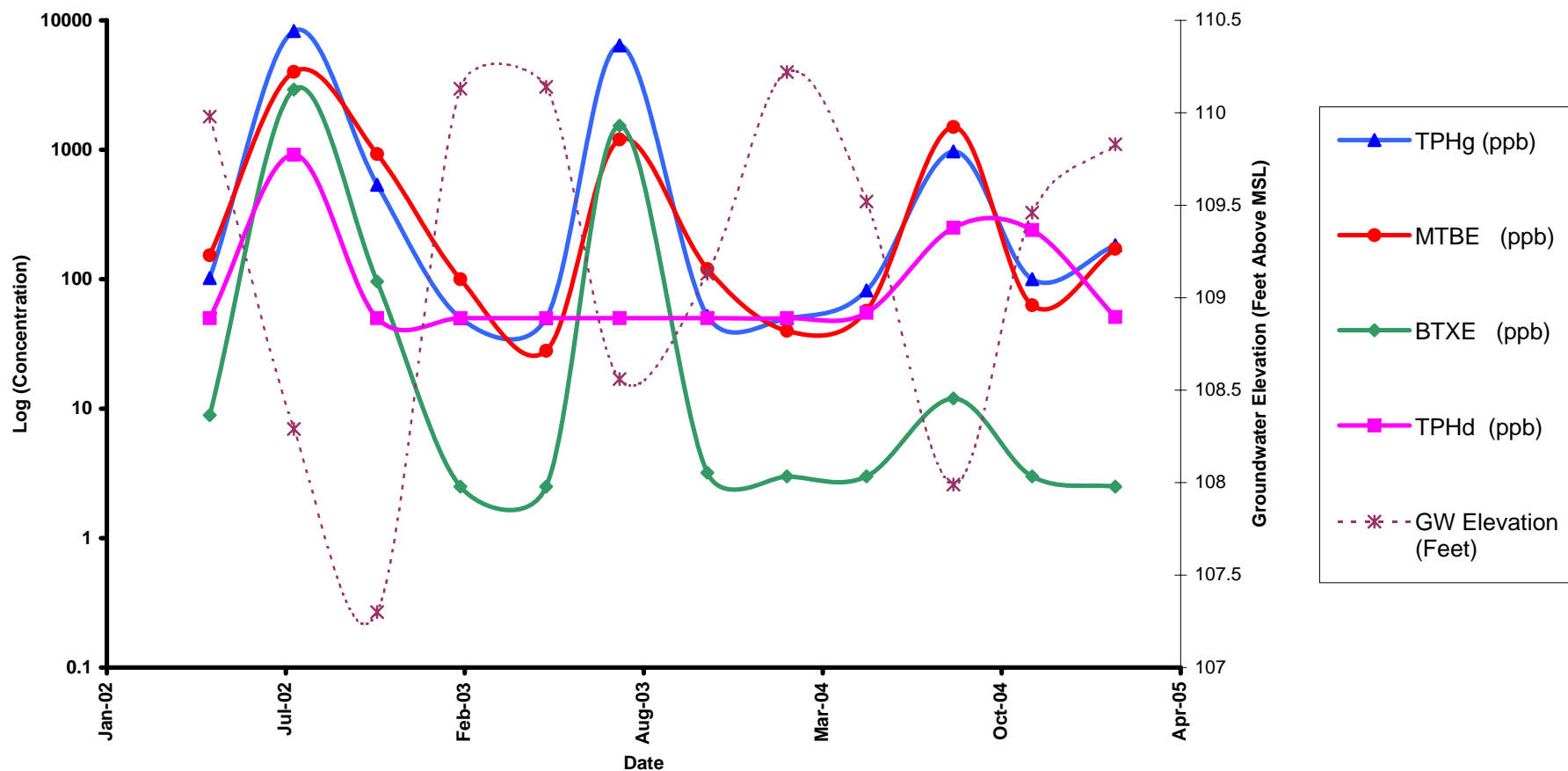
SP-120

Date

5/28/2005

Figure

6



**SounPacific**  
Environmental Services  
(707) 269-0884

### MW-3 HYDROCARBON CONCENTRATIONS VS. TIME

Bigfoot Gas  
2801 Central Avenue  
McKinleyville, California 95519

Project No.

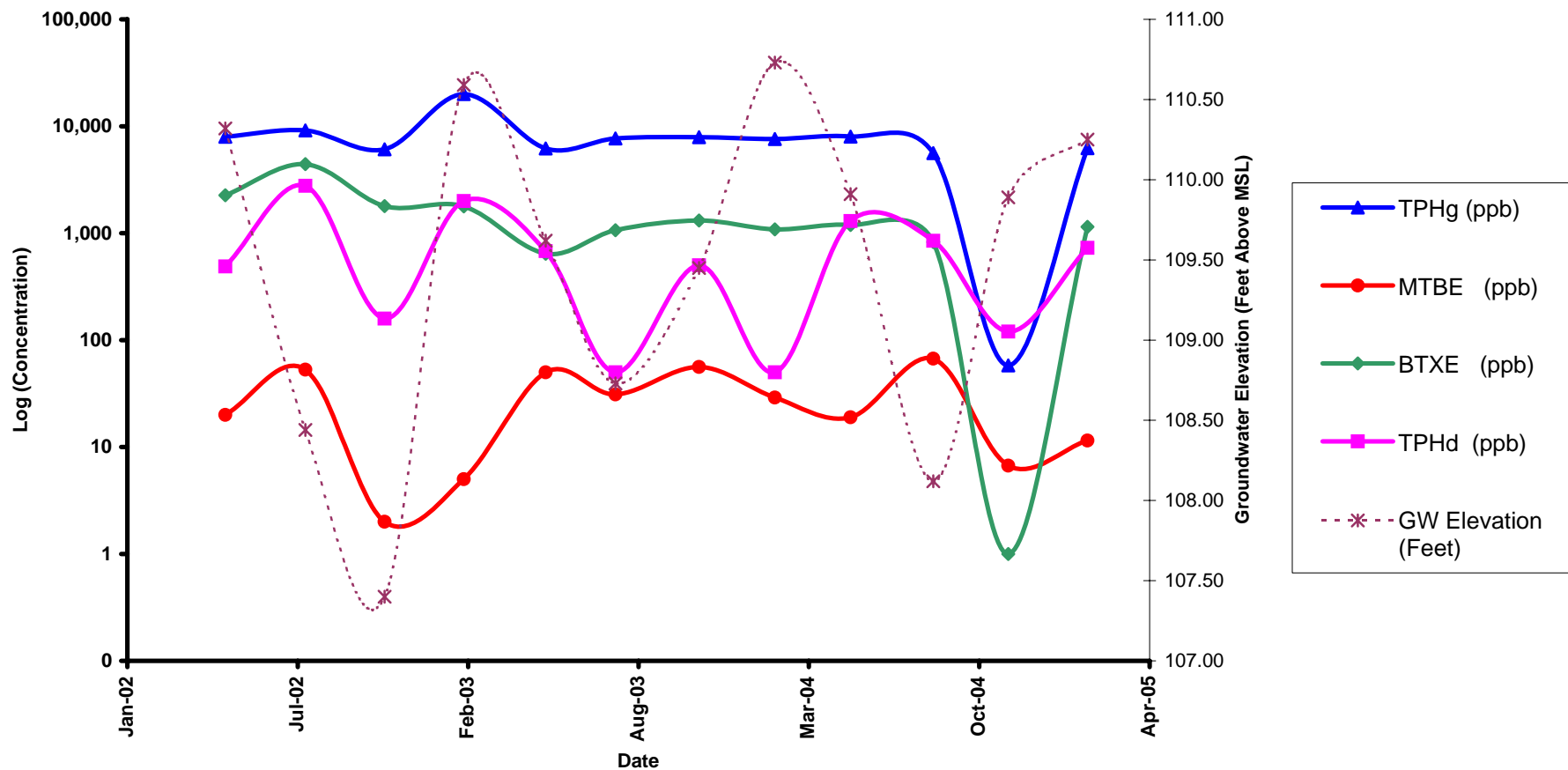
SP-120

Date

5/28/2005

Figure

7



### MW-4 HYDROCARBON CONCENTRATIONS VS. TIME

Bigfoot Gas  
 2801 Central Avenue  
 McKinleyville, California 95519

Project No.

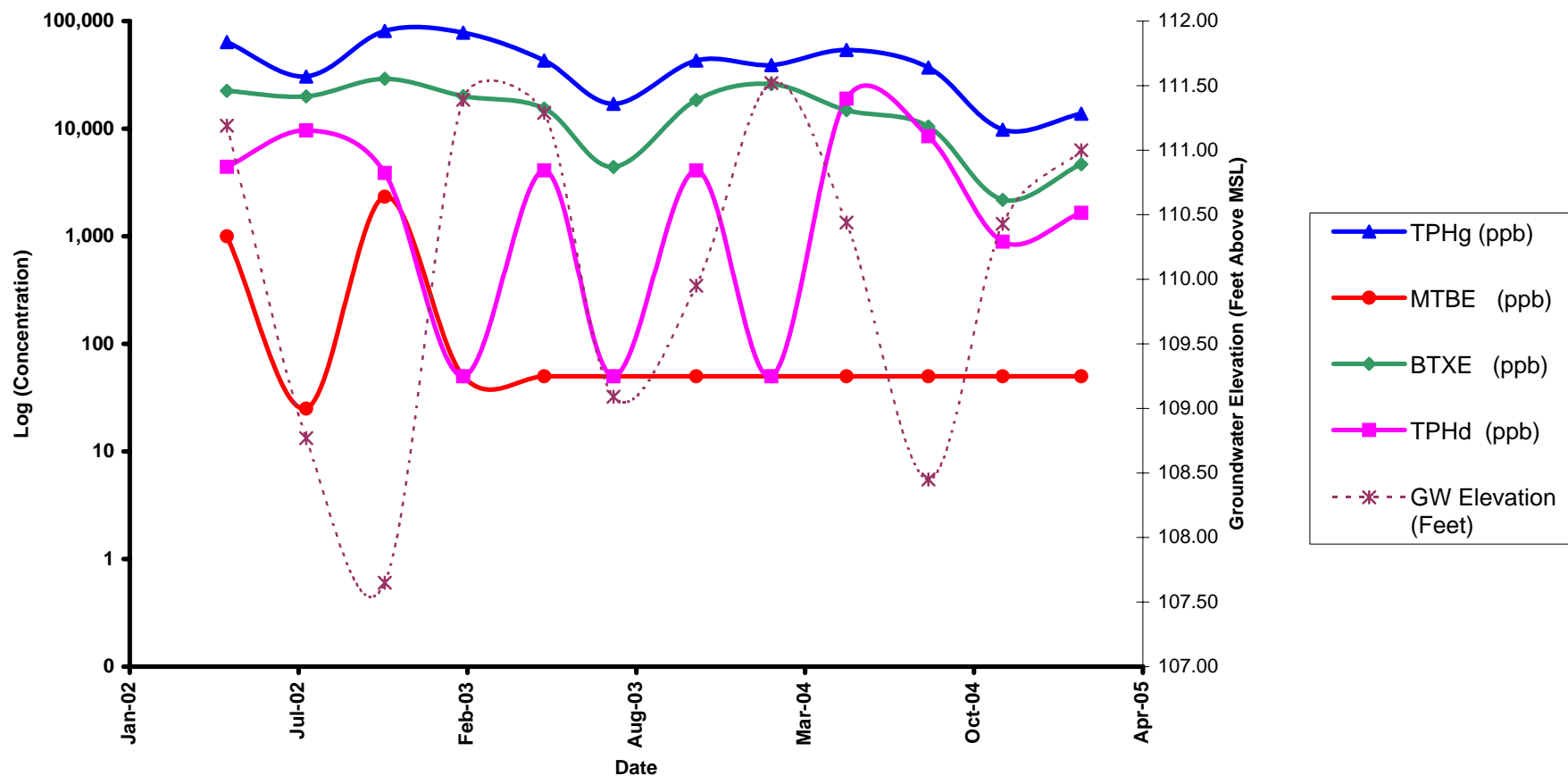
SP-120

Date

5/28/2005

Figure

8



### MW-5 HYDROCARBON CONCENTRATIONS VS. TIME

Bigfoot Gas  
 2801 Central Avenue  
 McKinleyville, California 95519

Project No.

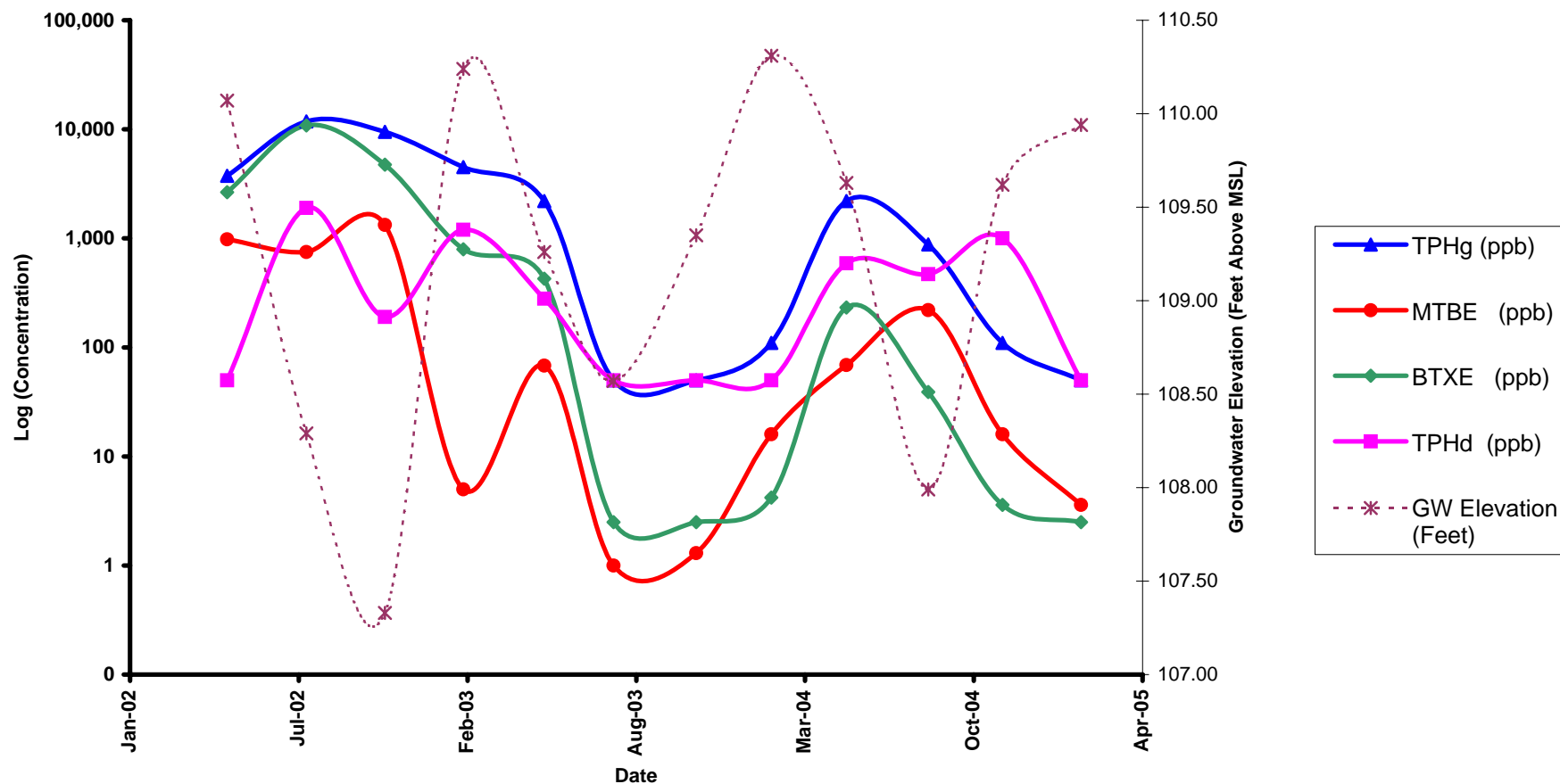
SP-120

Date

5/28/2005

Figure

9



### MW-6 HYDROCARBON CONCENTRATIONS VS. TIME

Bigfoot Gas  
2801 Central Avenue  
McKinleyville, California 95519

Project No.

SP-120

Date

5/28/2005

Figure

10

# Appendices

# Appendix A

February 24, 2005

**Lab ID: 5020366**

ANDY MALONE  
SOUNPACIFIC  
4612 GREENWOOD HEIGHTS DR  
KNEELAND, CA 95549  
RE: BIGFOOT GAS SP-120

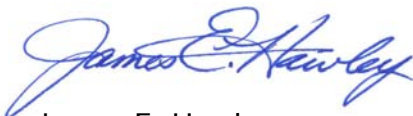
Dear ANDY MALONE,

Enclosed are the analysis results for Work Order number 5020366. All analysis were performed under strict adherence to our established Quality Assurance Plan. Any abnormalities are listed in the qualifier section of this report.

If you have any questions regarding these results, please feel free to contact us at any time. We appreciate the opportunity to service your environmental testing needs.

Sincerely,

For



James E. Hawley  
Laboratory Director

California ELAP Certification Number 1677

Report To: SOUNPACIFIC  
4612 GREENWOOD HEIGHTS DR  
KNEELAND, CA 95549

Attention: ANDY MALONE  
Project: BIGFOOT GAS SP-120

Description: MW-1

Matrix: Water

Lab ID: 5020366-01

Lab No: 5020366  
Reported: 02/24/05  
Phone: 707-269-0884  
P.O. #

Sampled: 02/06/05 00:00

Received: 02/09/05 10:17

## Volatile Organic Compounds

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
Gasoline	ug/l	ND			50.0	EPA 8015/8260	02/10/05	02/10/05	B5B0541
Benzene	"	ND			0.5	"	"	"	"
Ethylbenzene	"	ND			0.5	"	"	"	"
Toluene	"	ND			0.5	"	"	"	"
Xylenes (total)	"	ND			1.0	"	"	"	"
Methyl tert-butyl ether	"	ND			1.0	"	"	"	"
Di-isopropyl ether	"	ND			0.5	"	"	"	"
Tert-amyl methyl ether	"	ND			0.5	"	"	"	"
Ethyl tert-butyl ether	"	ND			0.5	"	"	"	"
Tert-butyl alcohol	"	ND			50.0	"	"	"	"
Surrogate: 4-Bromofluorobenzene		95.4 %			43-155	"	"	"	"

## TPH Diesel & Motor Oil

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
Diesel	ug/l	ND			50	EPA 8015 MOD	02/23/05	02/11/05	B5B0247
Motor Oil	"	ND			50	"	"	"	"
Surrogate: Octacosane		106 %			50-150	"	"	"	"

Approved By

Basic Laboratory, Inc.

California D.O.H.S. Cert #1677

Report To: SOUNPACIFIC  
4612 GREENWOOD HEIGHTS DR  
KNEELAND, CA 95549

Attention: ANDY MALONE  
Project: BIGFOOT GAS SP-120

Description: MW-2

Matrix: Water

Lab ID: 5020366-02

Lab No: 5020366  
Reported: 02/24/05  
Phone: 707-269-0884  
P.O. #

Sampled: 02/06/05 00:00

Received: 02/09/05 10:17

## Volatile Organic Compounds

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
Gasoline	ug/l	1230			50.0	EPA 8015/8260	02/10/05	02/10/05	B5B0541
Benzene	"	ND			0.5	"	"	"	"
Ethylbenzene	"	ND			0.5	"	"	"	"
Toluene	"	ND			0.5	"	"	"	"
Xylenes (total)	"	ND			1.0	"	"	"	"
Methyl tert-butyl ether	"	1170			50.0	"	"	"	"
Di-isopropyl ether	"	ND			0.5	"	"	"	"
Tert-amyl methyl ether	"	504			25.0	"	"	"	"
Ethyl tert-butyl ether	"	3.6			0.5	"	"	"	"
Tert-butyl alcohol	"	279			50.0	"	"	"	"
Surrogate: 4-Bromofluorobenzene		98.4 %			43-155	"	"	"	"

## TPH Diesel & Motor Oil

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
Diesel	ug/l	208	D-02		50	EPA 8015 MOD	02/23/05	02/11/05	B5B0247
Motor Oil	"	166	D-02		50	"	"	"	"
Surrogate: Octacosane		101 %			50-150	"	"	"	"

Approved By

Basic Laboratory, Inc.

California D.O.H.S. Cert #1677

Report To: SOUNPACIFIC  
4612 GREENWOOD HEIGHTS DR  
KNEELAND, CA 95549

Attention: ANDY MALONE  
Project: BIGFOOT GAS SP-120

Description: MW-3

Matrix: Water

Lab ID: 5020366-03

Lab No: 5020366  
Reported: 02/24/05  
Phone: 707-269-0884  
P.O. #

Sampled: 02/06/05 00:00

Received: 02/09/05 10:17

## Volatile Organic Compounds

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
Gasoline	ug/l	183			50.0	EPA 8015/8260	02/10/05	02/10/05	B5B0541
Benzene	"	ND			0.5	"	"	"	"
Ethylbenzene	"	ND			0.5	"	"	"	"
Toluene	"	ND			0.5	"	"	"	"
Xylenes (total)	"	ND			1.0	"	"	"	"
Methyl tert-butyl ether	"	172			10.0	"	"	"	"
Di-isopropyl ether	"	ND			0.5	"	"	"	"
Tert-amyl methyl ether	"	56.1			0.5	"	"	"	"
Ethyl tert-butyl ether	"	ND			0.5	"	"	"	"
Tert-butyl alcohol	"	ND			50.0	"	"	"	"
Surrogate: 4-Bromofluorobenzene		96.0 %			43-155	"	"	"	"

## TPH Diesel & Motor Oil

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
Diesel	ug/l	51			50	EPA 8015 MOD	02/23/05	02/11/05	B5B0247
Motor Oil	"	95			50	"	"	"	"
Surrogate: Octacosane		60.0 %			50-150	"	"	"	"

Approved By

Basic Laboratory, Inc.

California D.O.H.S. Cert #1677

Report To: SOUNPACIFIC  
4612 GREENWOOD HEIGHTS DR  
KNEELAND, CA 95549

Attention: ANDY MALONE  
Project: BIGFOOT GAS SP-120

Description: MW-4

Matrix: Water

Lab ID: 5020366-04

Lab No: 5020366  
Reported: 02/24/05  
Phone: 707-269-0884  
P.O. #

Sampled: 02/06/05 00:00

Received: 02/09/05 10:17

## Volatile Organic Compounds

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
Gasoline	ug/l	6230			200	EPA 8015/8260	02/10/05	02/10/05	B5B0541
Benzene	"	83.5			2.0	"	"	"	"
Ethylbenzene	"	343			10.0	"	"	"	"
Toluene	"	120			2.0	"	"	"	"
Xylenes (total)	"	602			4.0	"	"	"	"
Methyl tert-butyl ether	"	11.5			4.0	"	"	"	"
Di-isopropyl ether	"	ND			2.0	"	"	"	"
Tert-amyl methyl ether	"	ND			2.0	"	"	"	"
Ethyl tert-butyl ether	"	ND			2.0	"	"	"	"
Tert-butyl alcohol	"	ND			200	"	"	"	"
Surrogate: 4-Bromofluorobenzene		107 %			43-155	"	"	"	"

## TPH Diesel & Motor Oil

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
Diesel	ug/l	729	D-01, D-02		50	EPA 8015 MOD	02/23/05	02/11/05	B5B0247
Motor Oil	"	121			50	"	"	"	"
Surrogate: Octacosane		102 %			50-150	"	"	"	"

Approved By

Basic Laboratory, Inc.

California D.O.H.S. Cert #1677

Report To: SOUNPACIFIC  
4612 GREENWOOD HEIGHTS DR  
KNEELAND, CA 95549

Attention: ANDY MALONE  
Project: BIGFOOT GAS SP-120

Description: MW-5

Matrix: Water

Lab ID: 5020366-05

Lab No: 5020366  
Reported: 02/24/05  
Phone: 707-269-0884  
P.O. #

Sampled: 02/06/05 00:00

Received: 02/09/05 10:17

## Volatile Organic Compounds

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
Gasoline	ug/l	13800			500	EPA 8015/8260	02/10/05	02/10/05	B5B0541
Benzene	"	5.5			5.0	"	"	"	"
Ethylbenzene	"	407			5.0	"	"	"	"
Toluene	"	174			5.0	"	"	"	"
Xylenes (total)	"	4090			50.0	"	"	"	"
Methyl tert-butyl ether	"	ND			10.0	"	"	"	"
Di-isopropyl ether	"	ND			5.0	"	"	"	"
Tert-amyl methyl ether	"	ND			5.0	"	"	"	"
Ethyl tert-butyl ether	"	ND			5.0	"	"	"	"
Tert-butyl alcohol	"	ND			500	"	"	"	"
Surrogate: 4-Bromofluorobenzene		99.0 %			43-155	"	"	"	"

## TPH Diesel & Motor Oil

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
Diesel	ug/l	1650	D-01, D-02		50	EPA 8015 MOD	02/23/05	02/11/05	B5B0247
Motor Oil	"	151			50	"	"	"	"
Surrogate: Octacosane		110 %			50-150	"	"	"	"

Approved By

Basic Laboratory, Inc.

California D.O.H.S. Cert #1677

Report To: SOUNPACIFIC  
4612 GREENWOOD HEIGHTS DR  
KNEELAND, CA 95549

Attention: ANDY MALONE  
Project: BIGFOOT GAS SP-120

Description: MW-6

Matrix: Water

Lab ID: 5020366-06

Lab No: 5020366  
Reported: 02/24/05  
Phone: 707-269-0884  
P.O. #

Sampled: 02/06/05 00:00

Received: 02/09/05 10:17

## Volatile Organic Compounds

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
Gasoline	ug/l	ND			50.0	EPA 8015/8260	02/10/05	02/10/05	B5B0541
Benzene	"	ND			0.5	"	"	"	"
Ethylbenzene	"	ND			0.5	"	"	"	"
Toluene	"	ND			0.5	"	"	"	"
Xylenes (total)	"	ND			1.0	"	"	"	"
Methyl tert-butyl ether	"	3.6			1.0	"	"	"	"
Di-isopropyl ether	"	ND			0.5	"	"	"	"
Tert-amyl methyl ether	"	1.0			0.5	"	"	"	"
Ethyl tert-butyl ether	"	ND			0.5	"	"	"	"
Tert-butyl alcohol	"	ND			50.0	"	"	"	"
Surrogate: 4-Bromofluorobenzene		97.0 %			43-155	"	"	"	"

## TPH Diesel & Motor Oil

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
Diesel	ug/l	ND			50	EPA 8015 MOD	02/23/05	02/11/05	B5B0247
Motor Oil	"	86			50	"	"	"	"
Surrogate: Octacosane		101 %			50-150	"	"	"	"

Approved By

Basic Laboratory, Inc.

California D.O.H.S. Cert #1677

**Report To:** SOUNPACIFIC  
4612 GREENWOOD HEIGHTS DR  
KNEELAND, CA 95549  
**Attention:** ANDY MALONE  
**Project:** BIGFOOT GAS SP-120

**Lab No:** 5020366  
**Reported:** 02/24/05  
**Phone:** 707-269-0884  
**P.O. #**

### Notes and Definitions

D-01	This sample appears to contain volatile range organics.
D-02	Hydrocarbon pattern present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
<	Less than reporting limit
≤	Less than or equal to reporting limit
>	Greater than reporting limit
≥	Greater than or equal to reporting limit
MDL	Method Detection Limit
RL/ML	Minimum Level of Quantitation
MCL/AL	Maximum Contaminant Level/Action Level
mg/kg	Results reported as wet weight
TTL	Total Threshold Limit Concentration
STLC	Soluble Threshold Limit Concentration
TCLP	Toxicity Characteristic Leachate Procedure

---

Approved By

Basic Laboratory, Inc.

California D.O.H.S. Cert #1677



## **Appendix B**



## **Standard Operating Procedures**

### **Groundwater Level Measurements and Free Phase Hydrocarbon Measurements**

All SounPacific staff and contractors shall adopt the following procedures any time that groundwater elevations are determined for the purposes of establishing groundwater gradient and direction, and prior to any sampling event.

Wells are to be tested for free phase hydrocarbons (free product) before the first development or sampling of any new well, and in any well that has historically contained free product.

#### **Equipment Checklist**

- ☐ Combination water level / free phase hydrocarbon indicator probe (probe)
- ☐ Gauging Data / Purge Calculations Sheet
- ☐ Pencil or Pen/sharpie
- ☐ Disposable Gloves
- ☐ Distilled Water and or know water source on site that is clean
- ☐ Alconox (powder) or Liquinox (liquid) non-phosphate cleaners—do not use soap!
- ☐ Buckets or Tubs for decontamination station
- ☐ Tools necessary to access wells
- ☐ Site Safety Plan
- ☐ This Standard Operating Procedure
- ☐ Notify Job site business that you will be arriving to conduct work.

#### **Procedure**

1. Review Site Safety Plan and utilize personal protection appropriate for the contaminants that may be encountered.
2. Access and open all monitoring wells to be measured. Allow wells to equilibrate for approximately 15 minutes before taking any measurements.

3. Decontaminate probe with Alconox or Liquinox solution, and rinse with distilled water.
4. Determine the diameter of the well to be measured and indicate this on the Gauging Data / Purge Calculations Sheet.
5. Words of caution: Please be careful with water level and product meters probes are not attached with high strength material so please make sure to avoid catching the end on anything in the well and make sure not to wind reel to the point that it could pull on the probe. ***If product is suspect in a well, go to step 6, if no product is suspected go to step 7 below.***
6. **When product is present or suspected:** use the product level meter. Clip the static charge clamp to the side of the well casing. Then lower probe into the well through the product/water interface about one foot if possible. Then slowly raise the probe back up through the product/water interface layer and record the level as the tone changes from solid to broken-record this level in the Gauging Data / Purge Calculations Sheet to the nearest 0.01 foot (DTP). Continue to raise the probe up through the product until the tone stops completely-record this level on the Gauging Data / Purge Calculations Sheet to the nearest 0.01 foot (DTW). Then go to step 8.
7. **When no product is present or suspected:** If no free product is present, record the depth of the water (to the nearest 0.01 foot) relative to the painted black mark on the top of the well casing. Leave the probe in the well just a hair above the water level to ensure the well as equilibrated. As the well rises, the tone will sound. Make sure no increase in water levels have occurred in over a ten-minute period. Water levels can lower as well as rise. Make sure you note when the level you keep lowering the probe to has remained stable for at least ten minutes. Once this has been accomplished, please record this level in the Gauging Data / Purge Calculations Sheet to the nearest 0.01 foot (DTW).
8. Turn off the probe, and use the probe to determine the depth to the bottom of the well relative to the top of the well casing. This is the depth to bottom measurement (DTB).
9. Decontaminate probe and tape by washing in an Alconox/Liquinox solution (***read directions on solution for ratio of water to cleanser***) and use the toothbrush provided to remove any foreign substance from the probe and tape. Then triple rinse probe and tape with clean water and then proceed to take measurements in the next well.
10. If sampling is to occur, proceed to implement SounPacific's Standard Operating Procedure for Monitoring Well Purging and Sampling. If no sampling is to be performed, close and secure all wells and caps.



# Standard Operating Procedures

## Monitoring Well Purging and Groundwater Sampling

All SounPacific employees and contractors shall adopt the following procedures any time that groundwater samples are to be taken from an existing groundwater monitoring well.

Prior to the implementation of these procedures, the groundwater level **MUST** be measured and the presence of free phase hydrocarbons determined in accordance with SounPacific's Standard Operating Procedures for Groundwater Level Measurements and Free Phase Hydrocarbon Measurements.

### Equipment Checklist

- ☐ **Gauging Data / Purge Calculations Sheet used for water level determination**
- ☐ Chain of Custody Form
- ☐ pH/ Conductivity / Temperature meter
- ☐ Pencil or Pen
- ☐ Indelible Marker
- ☐ Calculator
- ☐ Disposable Gloves
- ☐ Distilled Water
- ☐ Alconox/liquinox liquid or powdered non-phosphate cleaner
- ☐ Buckets or Tubs for decontamination station
- ☐ Bottom-filling bailer or pumping device for purging
- ☐ Disposable bottom-filling bailer and emptying device for sampling
- ☐ String, twine or fishing line for bailers
- ☐ Sample containers appropriate for intended analytical method (check with lab)
- ☐ Sample labels
- ☐ Site Safety Plan
- ☐ Tools necessary to access wells
- ☐ Drum space on site adequate for sampling event

### **Procedure**

1. Review Site Safety Plan and utilize personal protection appropriate for the contaminants that may be encountered.
2. Measure groundwater levels and check for the presence of free product in accordance with the Standard Operating Procedures for Groundwater Level Measurements and Free Phase Hydrocarbon Measurements.

### **Purging**

3. Calculate and record the volume of standing water in each well using the information provided on the Gauging Data / Purge Calculations sheet.  
 $(DTB-DTW) \times \text{Conversion Factor} = \text{Casing Volume}$ .
4. The purge volume shall be at least three times and no more than seven times the volume of standing water (the casing volume).
5. Purge the well by bailing or pumping water from the well into a calibrated receptacle, such as a five gallon bucket or tub with markings to indicate one gallon increments. Collect purgeate in a 55 gallon labeled drum and store on site. Drum labels should include the date, contents, site number, and SounPacific's name and telephone number.
6. Take measurements of pH, conductivity, temperature, and visual observations to verify the stabilization of these parameters. At least five measurements of these parameters should be made throughout the purging process. The parameters shall be considered stabilized if successive measurements vary by less than 0.25 pH units, 10% of conductivity in  $\mu\text{S}$ , and  $1^{\circ}\text{C}$  (or  $1.8^{\circ}\text{F}$ ). Continue purging until at least three times the casing volume has been removed, and the measured parameters have stabilized as indicated above. Do not exceed seven casing volumes.
7. Take a final depth to groundwater measurement and calculate the casing volume of the recharged well. Ideally, the casing volume should have recharged to at least 80% of the original measured casing volume before sampling commences. If due to slow recharge rates it is not feasible to wait for the well to fully recharge, then note this on the Gauging Data / Purge Calculation Sheet and proceed to sample following the procedure below.

## **Sampling**

8. **After completing groundwater measurement, and checking for free product if necessary, in accordance with SounPacific's Standard Operating Procedures for Groundwater Level Measurements and Free Phase Hydrocarbon Measurements, and after purging monitoring wells as described above, groundwater samples may be collected.**
9. Slowly lower a clean, previously unused disposable bailer into the well water approximately half of the bailer length, and allow the bailer to slowly fill.
10. Withdraw the full bailer from the monitoring well and utilize the included (clean and unused) bottom-emptying device to fill the necessary sample containers, and seal the container with the included PTFE (Teflon) lined cap.
11. When filling VOAs, fill the VOA completely full, with the meniscus rising above the rim of the bottle. Carefully cap the VOA and invert it and gently tap it to determine whether air bubbles are trapped inside. If the VOA contains air bubbles, refill the VOA and repeat this step.
12. All samples shall be labeled with the Sample ID, the Sample Date, and the Sample Location or Project Number. Use an indelible marker for writing on sample labels.
13. Record all pertinent sample data on the Chain of Custody.
14. Place samples in an ice chest cooled to 4°C with ice or "blue ice". Bottles should be wrapped in bubble wrap, and VOA's should be inserted in a foam VOA holder to protect against breakage. Samples are to be kept at 4°C until delivered to the laboratory. Any transference of sample custody shall be indicated on the Chain of Custody with the appropriate signatures as necessary.
15. Utilize clean, previously unused gloves, bailer and line, and bottom-emptying device for each well sampled.
16. When finished with all sampling, close and secure all monitoring wells.
17. Leave the site cleaner than when you arrived and drive safely.

# Appendix C

## GAUGING DATA/PURGE CALCULATIONS

Job Site:

Bigfoot Gas

Job No.:

SP-120

Event:

"11th Quarterly"

Date:

2-6-05

**Soun Pacific**  
Environmental Services  
(707) 269-0884



RECEIVED  
2/8/05

WELL NO	DIA. (in.)	DTB (ft.)	DTW (ft.)	ST (ft.)	CV (gal.)	PV (gal.)	SPL (ft.)	Bailer Loads	Notes
MW-1	2	11.83	1.65	10.18	1.63	4.89			
MW-2	2	12.04	2.79	9.25	1.48	4.44			
MW-3	2	11.40	2.30	9.10	1.46	4.38			
MW-4	2	11.27	2.51	8.76	1.40	4.20			
MW-5	2	11.32	1.62	9.70	1.55	4.65			
MW-6	2	11.04	2.44	8.60	1.38	4.14			

## Explanation:

DIA. = Well Diameter

DTB = Depth to Bottom

DTW = Depth to Water

ST = Saturated Thickness (DTB-DTW)

CV = Casing Volume (ST x cf)

PV = Purge Volume (standard 3 x CV, well development 10 x CV)

SPL = Thickness of Separate Phase Liquid

## Conversion Factors (cf):

2 in. dia. well cf = 0.16 gal./ft.

4 in. dia. well cf = 0.65 gal./ft.

6 in. dia. well cf = 1.44 gal./ft.

Sampler:

LA Gaines

FILE

## Well Gauging/Sampling Report

Sheet 1 of 6

Date: 2/6/05 Project Name: Bigfoot Gas Project No: SP-120 Well Number: MW-1

Analyses Tested: BTEX, 5-oxy's, TPHg, TPH d/mo

Sample Containers: (3) HCL VOA's, (2) 1L Amber bottles

Purge Technique: ☒ Bailer ☐ Pump  
Sonde Used: ☐ Water Meter ☒ Interface Meter

### Water & Free Product Levels

Time	Depth to Water	Depth to Product	Notes
11:06	1.65		Sheen detected
11:23	1.65		↓
	End		

### Field Measurements

Time	Total Vol. Removed/(gal)	pH	Temp/(F)	Cond./(ms/cm)	DO/(mg/L)	DO/(%)	
12:06	0	7.20	53.74	.181	.78	7.3	
12:10	1.63	7.20	55.72	.180	.62	5.9	
12:16	3.26	7.26	56.50	.173	.49	4.7	
12:21	4.89	7.23	56.76	.172	.43	4.2	

Field Scientist: Jeff Gainer

## Well Gauging/Sampling Report

Sheet 2 of 6

Date: 2/6/05 Project Name: Bighof Gas Project No: SP-120 Well Number: MW-2

Analyses Tested: BTEX, 5-oxys, TPHg, TPH d/mo

Sample Containers: (3) HCl VOA's, (2) 1-L Amber bottles

Purge Technique: ☒ Bailer ☐ Pump

Sounder Used: ☐ Water Meter ☒ Interface Meter

### Water & Free Product Levels

Time	Depth to Water	Depth to Product	Notes
11:10	2.78		No Sheen
11:27	2.79		↓
	End		

### Field Measurements

Time	Total Vol. Removed(gal)	pH	Temp(F)	Cond. (ms/cm)	DO(mg/L)	DO(%)	
2:24	0	6.75	55.56	.673	.36	3.4	
2:28	1.48	6.91	56.20	.641	.29	2.8	
2:31	1.96	6.96	56.31	.608	.23	2.2	
2:36	4.44	6.96	56.38	.556	.18	1.7	

Field Scientist: Jeff Gaines

## Well Gauging/Sampling Report

Sheet 3 of 6

Date: 2/6/05 Project Name: Bigfoot Gas Project No: SP-120 Well Number: MW-3

Analyses Tested: BTEX, S-oxy's, TPHg TPHd/mo

Sample Containers: (3) HCl VOA's, (2) 1-L Amber bottles

Purge Technique: ☒ Bailor ☐ Pump

Sounder Used: ☐ Water Meter ☒ Interface Meter

### Water & Free Product Levels

Time	Depth to Water	Depth to Product	Notes
11:13	2.30		No sheen ↓
11:29	2.30		
	End		

### Field Measurements

Time	Total Vol. Removed (gal)	pH	Temp (F)	Cond. (mS/cm)	DO (mg/L)	DO (%)	
12:33	0	6.50	54.63	.208	.37	3.5	
12:37	1.46	6.59	56.37	.219	.56	5.4	
12:41	2.92	6.57	57.10	.271	.38	3.6	
12:51	4.38	6.60	58.23	2.89	.29	2.9	

Field Scientist: Jeff Gaines

## Well Gauging/Sampling Report

Sheet 4 of 6

Date: 2/6/05 Project Name: Bigfoot Gas Project No: SP-120 Well Number: MW-4

Analyses Tested: BTEX, S-Oxys, TPHg, TPH d/mo

Sample Containers: (3) HCl VOA's, (2) 1-L Amber bottles

Purge Technique: ☒ Bailor ☐ Pump

Sounder Used: ☐ Water Meter ☒ Interface Meter

### Water & Free Product Levels

Time	Depth to Water	Depth to Product	Notes
11:15	2.51		No sheen
11:32	2.51		↓
	End		

### Field Measurements

Time	Total Vol. Removed (gal)	pH	Temp (F)	Cond. (ms/cm)	DO (mg/L)	DO (%)	
1:03	0	6.91	59.05	.297	.17	1.7	
1:06	1.40	6.95	59.33	.300	.18	1.8	
1:12	2.80	7.06	59.63	.293	.19	1.9	
1:18	4.20	7.09	59.53	.294	.18	1.8	

Field Scientist: Jeff Graines

## Well Gauging/Sampling Report

Sheet 5 of 6

Date: 2/6/05 Project Name: Bigfoot Gas Project No: SP-120 Well Number: MW-5

Analyses Tested: BTEX, 5-OXys, TPHg, TPHd/mo

Sample Containers: (3) HCl VOA's, (2) 1-L Amber bottles

Purge Technique: ☒ Bailer ☐ Pump

Sounder Used: ☐ Water Meter ☒ Interface Meter

### Water & Free Product Levels

Time	Depth to Water	Depth to Product	Notes
11:18	1.62		No sheen
11:36	1.62		Sheen detected
	End		

### Field Measurements

Time	Total Vol. Removed (gal)	pH	Temp (F)	Cond. (ms/cm)	DO (mg/L)	DO (%)	
1:34	0	6.95	50.87	.218	.28	2.5	
1:39	1.55	6.99	51.68	.248	.21	1.9	
1:44	3.10	6.99	51.81	.250	.21	1.9	
1:48	4.65	6.99	51.84	.252	.19	1.8	

Field Scientist: Jeff Guines

## Well Gauging/Sampling Report

Sheet 6 of 6

Date: 2/6/05 Project Name: Bigfoot Gas Project No: SP-120 Well Number: MW-6

Analyses Tested: BTEX, 5-oxys, TPH<sub>3</sub>, TPH d/mo

Sample Containers: (3) HCL VOA's, (2) 1-L Amber bottles

Purge Technique: ☒ Bailor ☐ Pump

Sounder Used: ☐ Water Meter ☒ Interface Meter

### Water & Free Product Levels

Time	Depth to Water	Depth to Product	Notes
11:20	2.44		No sheen
11:40	2.44		↓
	End		

### Field Measurements

Time	Total Vol. Removed (gal)	pH	Temp (F)	Cond. (ns/cm)	DO (mg/L)	DO (%)	
1:55	0	7.24	54.16	.152	.21	1.9	
2:04	1.38	7.09	56.35	.158	.14	1.4	
2:08	2.76	7.05	57.21	.167	.13	1.3	
2:14	4.14	7.02	57.39	.171	.13	1.2	

Field Scientist: Jeff Graines